



22, 414 / B / A 1

E XVIII

19/f

D. G. B. G. M. S.

Am. B. G. M. S.

Mr. G. B. G. M. S.

Windsor - 151

D. Snow

NOTES AND RECOLLECTIONS

54800

OF A

PROFESSIONAL LIFE,

BY THE LATE

WILLIAM FERGUSSON, ESQ. M.D.

INSPECTOR GENERAL OF MILITARY HOSPITALS.

EDITED BY HIS SON,

JAMES FERGUSSON.

LONDON:

PRINTED FOR

LONGMAN, BROWN, GREEN, AND LONGMANS,

PATERNOSTER ROW.

1846.



D. Snow

EDITOR'S PREFACE.

THERE are few observant minds to whom the pursuit of knowledge does not bring that pleasure which seems to be the certain concomitant of honest inquiry ; but there are some so constituted that they even feel a greater pleasure in communicating to others the knowledge they may possess. To few does this seem to have been a more imperious matter of necessity than to the author of the present volume, who, whenever a truth flashed on his mind, or any new discovery struck him, hastened to communicate it orally to his friends, and to publish it to the world in any of the newspapers or periodicals whose purpose it suited to open their columns to receive it. Another characteristic that will account for much in the present volume, was that fervid detestation of anything savouring of imposture or oppression, which all good and ardent minds must feel, but which few have ever felt more strongly than he did ; and, in consequence, no sooner did any instance of this occur within the circle of his knowledge, and more particularly, of quackery or delusion, if connected with his profession, than he instantly seized his pen to attack and expose it ; but, in like manner, he sought to do so only in the fleeting publications of the day, and, having disburthened his mind of his indignation, he left the matter to the public, believing that all were as earnest and sincere in the search after truth as himself, and that it only required that it should be pointed out, in order that all might believe and practise it,—never reflecting that the

public either look with suspicion, or only glance at and forget, the really valuable papers these periodicals often contain, regarding them in the same light they do the ephemeral or party writings with which they are mixed up, and that really to command attention, a work must stand forth on a more permanent and independent basis of its own.

It was not, however, till a few years before his death, that my father became convinced of this, and, consequently, of how many opportunities he had lost of doing good, and how much time he had wasted; for though, as he himself says, his pen was seldom idle, and his writings, if collected, would fill many volumes, still he felt that he had nothing which he could point as his own, or which he could hope would survive himself.

During the many years he was employed on active service, the composition of any connected work was of course not to be thought of; and something may perhaps be due to the unsettled habits engendered by so long a period of restless activity, that disinclined him from undertaking any extensive literary work. When, however, in after years, he began to feel himself unequal to the active pursuits of his profession, and its exercise was no longer an object of much importance to him in a pecuniary point of view, he determined to record, for the benefit of the public, the fruits of his personal experience.

The result of this determination was the composition of the present volume, as far as page 124, which was completed, as now published, in the autumn of the year 1843; when, thinking that enough was done to show at least what the work was intended to be, the composition was for a time suspended, and the manuscript was shown to several parties, preparatory to arrangements being made for its publication. Nothing, however, had been definitively arranged, when he was attacked by his last illness in November, 1843; and from that time till after his death it

remained sealed up in my hands; for though, owing to the assiduous care and unwearying watchfulness of those around him, he so far rallied from an almost hopeless attack of paralysis as to enjoy the society of his family and friends, he never recovered sufficiently to be able himself to undertake the revision of his work, though still well enough to be aware of all that was going on, and to have felt anxious and fidgetty about its progress through the press, and its reception by the public, had that task been attempted by another; which, therefore, under the circumstances of his health, could not for a moment have been thought of. The manuscript was therefore laid aside for more than two years and a half, and it is only now, that, in consequence of a testamentary request, I have undertaken the task of Editor, and offer it to the public; though, in doing this, I am perfectly aware of many defects the work unfortunately possesses, and which might deter some from risking its publication. In the first place, it is manifestly imperfect, ending abruptly with the article on Syphilis, without any peroration or resumé; and I know it was my father's intention to have added considerably to it, besides correcting many minor defects in its passage through the press. But even had this been completed, it then would have been only half the intended work, which was to have had a second volume, comprehending his opinions and experience of the civil branch of his profession, as this volume did of the military; and as for more than a quarter of a century he had exercised his profession as a physician in Edinburgh and at Windsor, the second would probably have been the more interesting and amusing volume of the two. In this latter it was, I believe, his intention to have abstracted, and indeed rewritten, the papers on Plague, Yellow Fever, Typhus, Cholera, &c., which are reprinted in the second part of the volume almost verbatim from the periodical publications in which they originally appeared.

Notwithstanding these defects, I feel that there is information and valuable suggestions in the work, the results of long practical experience, that will well repay the trouble of perusal, and make the reader forget its blemishes ; and much as I may regret that the author did not live to complete his work, and put the finishing hand to it himself, I cannot doubt for one moment the propriety of sending it to the press, even if I should not feel very confident of its being appreciated by the public as perhaps my too partial judgment may lead me to believe it deserves.

In performing the task of Editor, I have not permitted myself to alter or improve the work according to what I, or any one else, may have thought would be improvements ; and whatever my own ideas may be, with regard either to the whole or any part of the work, all I have proposed to myself has been to bring it out as nearly as possible as I believe my father would have himself published it in the spring of the year 1844, had his health permitted ; and though, as above stated, the materials at my command do not admit of this being fully carried out, I can only say I have done so as far as they would permit ;—and all I have ventured upon has been to arrange the manuscripts, to correct the press, and occasionally to transpose a word, and add an adverb or expletive when the sense appeared to require it.*

One thing, as Editor, it might have been expected that I should have done, which is, to bring the information down to the present

* The papers that form the latter part of the volume having all been written as separate and detached essays, and published at different times, though referring to similar subjects, they often necessarily contain not only repetitions of the same arguments, but of passages nearly in the same words as are found in other parts of the work, which I would willingly have expunged to avoid the tautology ; but in every instance where I have attempted this, I have found the chain of argument so weakened by it, that I have been forced to allow them to remain, though I am aware that this has given rise to much repetition that cannot fail to strike even the most cursory reader.

day ; but even this I have not attempted ; and though I am aware that, since the work was written, much has been done to ameliorate the condition of the soldier,—the terms of enlistment have been modified—flogging, if not abolished, at least discountenanced, and much progress made towards many of the reforms he so earnestly advocates, and that much new light, confirming my father's views, has been thrown on the subject of plague and quarantine, by commissions appointed by the French and Russian governments, which I could easily have added, I have not done so, for I feel that my father throughout represents the army rather as it was when he served with it, than as it is ; that he desired to reprobate abuses even though they had been reformed, to stigmatise them if still existing, and to point out the means of removing them ; and that in this resides the value of the work ; not in a methodical enumeration of trivial details, or a complete statistical account of the practices of the army, or the details of nosology. But for this feeling, I have been strongly tempted to extract, in the shape of Notes, the reports on plague, as well as the numerous passages in the despatches of the army of the Sutledge, which have come to hand during its progress through the press, and which bear so strongly on the military part of the subject, and confirm almost every word of the text, not only with regard to the qualities of the British soldier, but also as to the deficiency of his equipment, and that lamentable paucity of artillery, which there, as every where, has proved so fatal to the British Infantry. These, however, are matters of note, fresh on the mind of every one, and will occur to all who read these pages ; but I cannot deny myself the pleasure of extracting one little passage which from its brevity may have escaped general attention, but which so strongly confirms all that is stated in this volume, regarding national regiments and small-sized men, that it seems almost to have been written on purpose.

In the middle of his despatch of the 13th of February, 1846, relating to the battle of Sobraon, Sir Hugh (now Lord) Gough remarks : “ I must pause in this narrative especially to notice the determined hardihood and bravery with which our two battalions of Ghoorkas—the Simoor and Nusseeree—met the Sikhs whenever they were opposed to them : soldiers of small stature but indomitable spirits, they vied in ardent courage, in the charge, with the grenadiers of our own nation ; and, armed with the short weapon of their mountains, were a terror to the Sikhs throughout this great combat.’

These men do not average five feet in height, and their weapon—the kookree—is a sort of bill-hook or dirk, not longer than a highlander’s. On the eve of a not improbable contest with America for the territory of Oregon, the remarks in the text with regard to the rifle, may, before we are much older, prove even more fatally prophetic to our gallant soldiers, than those on artillery did of the fate of those who perished so needlessly at Feroze-shuhr.

In offering a posthumous work to the public, it may be expected that it should be preceded by a biographical sketch of the author, and I admit that this might be an improvement ; but not on me should this task fall, for I feel it is impossible for me to write regarding a parent so long revered, and so recently lost, without either putting that constraint on my feelings which would expose me, and justly, to the reproach of affectation, or, on the other hand, giving way to praise which, to strangers, would appear as fulsome panegyric.

Few men had a more numerous circle of friends than my late father—few, friends of longer standing and more tried—and very few, I may be permitted to add, were more beloved within that circle than he was,—on them, therefore, not on the suspicious partiality of a son, let the task devolve, if it is thought worth while,

to record the services and virtues of him who is now no more. In the meantime, the following dates and facts may serve to elucidate and explain the text, and merely as such I add them.

WILLIAM FERGUSON, the author of this work, was born at Ayr, on the 19th of June, 1773. His father's family had long been one of the most influential of his native place, and had filled the principal municipal offices, when these were objects of ambition to the upper classes of provincial towns, and when the whole parish belonged in common to the Burgh.

His mother was the youngest daughter of John Hutchinson, of Monkwood, an estate about five miles south of Ayr, on the banks of the Doon, and, of a large family of fourteen, she and the eldest only survived. The latter remained unmarried, and inheriting the property, continued to manage it to the age of 96, when she died, in the full possession of her faculties, in the year 1826.*

Her youngest sister was the only one that left any issue, and of a family of six, my father was the fourth. Having two elder brothers, he was destined to make his own way in the world; and, after receiving an excellent classical education in the academy at Ayr, then, and for long afterwards, one of the best schools in the west of Scotland, he finished his education at the College of Edinburgh, and having served his apprenticeship in medicine under Dr. James Russell, of St. Andrew's Square, in that town, he

* Monkwood, the residence of his aunt, is beautifully situated on the Doon, amidst scenery hallowed by the lay of the poet Burns; and was then, and for long afterwards, the home of all the branches of the family. It was there my father passed his school holidays and academical vacations, and, wandering on the banks of the river, or traversing its stream rod in hand, he imbibed an enthusiastic fondness for angling, in which art he became no ordinary proficient—a passion which never forsook him during the whole course of his life; and he was ever ready to seize upon a day of recreation from the care and exertion of his professional duties, to enliven his spirits and recruit his bodily strength in the exercise of his favourite amusement.

afterwards completed that branch of his education by walking the hospitals in London.

At the age of 21, he entered the army as Assistant-Surgeon; and, in elucidation of his progress from this period, I cannot do better than quote an official return he made to Head Quarters a few years ago, when all medical officers were invited to send in a statement of their services, for the information of the Secretary of War and Commander-in-Chief. It was as follows:—

“Joined the army in 1794, at Ghent, immediately after his appointment, and accompanied it as far as Bois le Duc, on the retreat through Holland, when he was present at the affair of Boxtel, which took place near that fortress; his commission as Surgeon of the 2d Bat. 90th Regt. having been antedated to the date of the letters of service for raising the regiment. On the 2d Bat. 90th Regt. being disembodied, he joined the 67th Regt. in St. Domingo early in the year 1796, when, being stationed at Cape St. Nicholas Mole, he accompanied the troops, and officiated as surgeon on six different occasions of service and action with the enemy. On the final évacuation of that colony, he received thanks in public orders, and obtained leave of absence to return to Europe on account of his services. As Surgeon of the 5th Regt. he was present in the general action of the 19th September, 1799, and also in the battles of the 2d and 6th of October; and in the affair of Winkel, on the 11th of the same month, the 5th Regt. was particularly distinguished. In 1801 he accompanied the expedition to the Baltic as Staff-Surgeon of the troops embarked, and was present on board the flag-ship in the attack upon the Danish line of defence before Copenhagen; after which he was entrusted with the conveyance of the British wounded to Yarmouth, when he received the thanks of the Sick and Hurt Office, on delivering up his charge, and also the thanks of Admiral Lord

Nelson on his return to the Baltic.* In the Peninsula he was principal medical officer at the taking of Oporto and passage of the Douro. He accompanied the Army to Talavera, and was present at that battle. At the battle of Busaco he served as Chief of the Medical Department with the Portuguese Auxiliary Force. In the year 1815 he accompanied the expedition against Guadeloupe, and received the thanks of the General commanding, on the reconquest of that colony. His name having been mentioned in the despatches of that event, he quitted the command in the year 1817, when he received the thanks of the Commander of the Forces in general orders, and also the thanks of the Army Medical Department at home on the same occasion."

On his return from the West Indies in 1817, he settled at Edinburgh, with the intention of practising there as a physician; but after four years' experience, finding the place already overstocked with medical men, and very little chance of success, he was induced, at the invitation of His Royal Highness the Duke of Gloucester, to remove to Windsor, where an opening presented itself; and, owing to the introduction afforded him by the connection with his Royal Highness, in whose staff he had then been for more than twenty years, and who always showed him the utmost friendship and kindness, as well as favoured by local circumstances, he soon fell into an extensive and lucrative practice, both in the town and country, and this he continued to enjoy until overtaken by his last fatal illness, though declining health, and long and repeated holidays, had latterly diminished its extent. He still, however, continued in the enjoyment of society and the occupations of his active mind, of which the writing of this work was one of the principal and most enjoyed, till November 1843; when, called upon to attend as a witness for a friend on a trial at Westminster Hall.

* The year of the peace of Amiens was spent in travelling through the north of Europe, on the staff of his Royal Highness the Duke of Gloucester.

the fatigue and annoyance of waiting two days in a crowded court proved too much for him, and he returned home uncomfortable and unwell, and shortly afterwards had a slight attack of paralysis. This he recovered; but a second and a third utterly prostrated him, and his life was long despaired of. As before mentioned, he partially recovered, but never so as to lead to any hopes of his ever being perfectly restored, or indeed to enable those around him to feel sure that he would live on for many days; till at length, by the second of January last, he had become weaker and weaker, fairly worn out by long disease, and in the evening of that day sank into a placid sleep from which he never woke, but passed away so gently, that those around him could not say when the sad event took place which left her a widow who, for forty-two years, had known no dearer object in life than his happiness and the welfare of his children, and who has crowned her devotion to him by two years of such unwearying watchfulness and care during his last illness, as it falls to the lot of few to be able to perform. He left, besides, two sons, the eldest of whom is now in India, and three daughters.

His remains were deposited in Highgate Cemetery, immediately behind the Church, where, in accordance with his testamentary direction, "a plain slab covers the grave, on which is engraved a correct designation of the inhabitant below, and no more."

LANGHAM PLACE,
April 1846.

CONTENTS.



	PAGE
EDITOR'S PREFACE	V

PART FIRST.

INTRODUCTORY REMARKS	1
MILITARY TACTICS	5
Of the Three Nations that compose the British Army	9
Of the Selection of the Soldier	28
EXERCISE, DRESS, AND ARMS.	
Of the Exercises of the Soldier	26
Of the Dress of the Soldier	38
Of the Arms of the Soldier	42
OF BARRACKS AND BARRACK LIFE	49
MILITARY HOSPITALS AND STAFF.	
Of Military Hospitals	56
Of the Hospital Staff	64
OF DIET AND RATIONS	69
OF FEVER AS AN ARMY DISEASE	89
OF DISINFECTANTS	96

	PAGE
DYSENTERY	103
OPHTHALMIA	110
SYPHILIS	117

PART SECOND.

PLAGUE AND QUARANTINE	125
YELLOW FEVER	142
ON TYPHUS FEVER AND CONTAGION GENERALLY	162
ON MARSH MIASMATA	185
ON BLACK TROOPS IN THE WEST INDIES	206

APPENDIX.

LETTERS ON CHOLERA	215
------------------------------	-----

NOTES AND RECOLLECTIONS

OF A

PROFESSIONAL LIFE.

INTRODUCTORY REMARKS.

IN this strange desultory book, *de omnibus rebus medicis cum multis aliis*, it is my intention to write upon whatever subject I think the experience of my life may have given me opportunity to observe, or qualified me to understand. I know well that in this last respect many have deceived themselves, and should I prove to be one of the self-deluded, I must just pay the penalty in the printer's bill; but I have now arrived at that period of life when its game has been nearly played out, and I feel that if I am to write at all, I have little time to lose in setting about it.

I shall, therefore, using another privilege of my age, venture upon the task without fear or favour to any authority, or school, or party; but taking what I believe to be the spirit of truth for my guide, fearlessly tell it in every part of my subject, always, however, eschewing personal offence and needless injury to the feelings of the living, or memory of the dead. In this way, then, I still flatter myself I shall be able to produce a readable work, for my early life was a deeply varied one, and if I cannot describe what was so long its business and contemplation, it must be through want of ability in the narrator, not through default of interest in the subject. But be this as it may, I served throughout the whole course of by far the most eventful war in which Britain

ever was engaged, and then was engaged on fields and scenes of service, the instruction derived from which ought not to be lost, provided the pen can be found qualified to give it to the world. To obviate the reproaches I may encounter for presuming to write upon subjects altogether military, I may be allowed to state that during the quarter of a century that I served with the armies of the country, I officiated as surgeon of three separate regiments in different parts of the world. I embarked nine times from the shores of Britain with armaments on foreign expeditions, and during twenty-four years actual service (for the year of the peace of Amiens has to be deducted), I spent seventeen years, or parts of them, in other climates, passing through every grade of medical rank, in every variety of service, even to that of the sister service of the Navy; and it then was my fortune to have sailed in every ship of war, from the first-rate of the line, down to the smallest craft that carries a pennant.

For nearly fifty years I have been an indefatigable scribbler on whatever subject affected the Public Health, civil or military; but the health of armies was, above all, the shrine at which I worshipped during all my earlier and better years. My writings have been mostly of a fugitive kind, and those I scattered wherever I chanced to be placed, with a prodigal and careless hand, in the orderly books of armies, or official correspondence of departments—the pages of periodicals—the records of societies—detached pamphlets, and contributions to the works of other writers. Indeed, of so little account did I generally reckon them, that I have not unfrequently found parts and parcels in the pages of my contemporaries without at all recognizing them for my own. Let this work, then, be taken for a gathering up of fragments and reclamation of much that I must otherwise have given up for lost,—a digested abstract of opinions and observations that have been subjected to the ordeal of long and deliberate consideration.

For candid criticism I shall ever feel most grateful, but I shall not reply to it otherwise than by correcting the errors and mistakes I may have fallen into, in a second edition, should this work ever be permitted to arrive at that distinction. I feel that I am past the age of controversy. Its triumphs would bring me little satis-

faction, because I know they would stain my pages, if achieved, even temporarily, at the expense of truth. I write not for the drawing-room, or the schools, or the circulating libraries, or for any time-serving purpose, but I write more especially and in the first instance, to illustrate, if I better can, the British military character. The qualities that ennoble the soldier, and the vices and diseases that shorten his life, are matter of the deepest interest to the country, for on all our foreign services the expenditure of men has ever been enormous. Some of it, I believe much, might have been saved by a better considered administration, and it is for this reason that I now for the first time, in what I intend for a systematic work, enter the lists as a regular author. On other military matters I have also ventured to give an opinion, and it is probable the *ne sutor ultra crepidam* may be thrown in my face; but this I cannot help. Let my book, if it can, vindicate itself; and should waste paper be the verdict, the sooner it is executed the better.

I shall divide the work into two parts. The first, of Military Service, with its Diseases—the second, of the Civil Practice of Medicine. In regard to the former, the volume has been closed ever since the Peace of Paris. The latter, though near an end, remains open, and is not yet completed.

When the proper time arrives, I shall in the same spirit of truth endeavour to do justice to the liberal profession of which I have been so long a member, to the interests of its practitioners, and the rights of the community.

MILITARY TACTICS.

THE British soldier is acknowledged by all the rival nations of the continent to be a firm, powerful, and valiant man, whom they have been taught to respect, even while they attempt to ridicule or malign him. We at home know that the army, generally speaking, has been gathered from the scum and refuse of the population, without qualification, or question asked beyond those of stature, health, and general appearance. If the recruit pleased the eye, all was well. A conscription would have afforded to the army a fairer sample of the people in all their moral and physical bearings ; but we have never had anything of the kind, except an indirect one, by volunteering for a bribe of money from the Militia, which, again, was a conscription of an imperfect kind, for much that was valuable in it procured exemption from service, by substitute from the same refuse. Such a body, so composed, would appear to stand in need of able instructors, and a stern military code : of the first, what shall we say ? for, in the earlier years of the last war, after the remnant of the old army that had served in the contest of America was expended in the campaigns of 1793-4, we had the same refuse of the population, officered by the refuse of the trades and professions. The only qualification of the intrant officer was the price of an ensign's commission, which, once obtained, no further question was asked, and the rich aspirant might climb through every step of military rank without so much education as would enable him to construct a field-work of the simplest kind, or even to know the use of the sword he carried by his side. Whether matters in these last respects have been much amended since I left the army, I am not qualified to decide. I only know, that the least meritorious of all qualifications, the command of money, regulates the promotion of the British army, damps its chivalry, and makes barter of all that ought to be the meed of heroism and desert. A patriotic writer has beautifully said, "that

the British soldier fights under the cold shade of aristocracy." It may also be truly said, that he fights still more frequently under Mammon's sordid banners, for the veteran subaltern of many campaigns, while moneyless, may point in vain to his wounds, and enumerate the breaches he has defended or stormed—he will remain as far, and further, from promotion than if he had staid at home, seeking through servility in the antechamber of office what his sword had failed to procure for him in the field.

It may well be asked, how, under these circumstances, the country could have come out victorious from a contest for existence of unparalleled difficulty and duration ; for in its beginning the disasters of Holland and Flanders, and the West Indies, stained our military fame, and made all Europe believe (indeed we began to believe it ourselves) that in the battle-field we were unfit to cope with the French. Then it was that a chief seemed to be providentially raised to the rescue, who, whatever might be his merits in the field, possessed knowledge, and virtue, and independence, adequate to the reformation of much of the corruption that had so fatally pervaded our army. In this most jobbing country, the late Duke of York could not root out every abuse, but he effected more than could have been supposed, and as much as the corruption of parliament and state of parties could possibly permit. It was in the glorious campaign of Egypt, that, through his exertions, we were first undeceived, and the delusion was fairly exposed to the world ; for ignorant as our officers might be of military science, the British blood flowing within their veins set at nought the vauntings of their Gallic foe. There it began, and from thence the tide flowed in one unbroken current of military success through the fields of the Peninsula, until France twice invaded, and her capital twice occupied by the enemy she had so long despised, was made to feel that the race of men who fought at Crecy and Poitiers still lived in their descendants ; and so it has been in every war, where Britain, fully awake, has put forth her strength in earnest. At the beginning of the contest she has always been at fault. The genius of the country is little military, and her soldiers are slow, slower certainly than the French, to learn ; but when duly trained, with time given to form the

soldier, there never stood before his enemy a more perfect model of military excellence ; of all modern warriors he is the most generous, and the least blood-thirsty in actual conflict. *Parcere subjectis debellare superbos* seems written on his brow. His courage is regulated in the calm repose of conscious power, and he holds it in reserve, like one who knows its value. The infantry of Charles the Fifth would have quailed before that of Britain in the Peninsula, and the Macedonian phalanx, and the legions of ancient Rome, could never have presented a front more imposing, or prowess better sustained, or more exalted. A foreign writer, with noble impartiality, has summed up the character in a few words. “ *Les Anglois sont indubitablement le peuple le plus intrepide de l’Europe. Celui qui affronte la mort et la voit approcher avec le plus de sang froid et d’indifference.*” But would all this have been known or acknowledged, had the clamourers for peace obtained their object during any period of the first seven years of the war? We have indeed paid the price, in a debt of enormous amount ; but it was worth it. The loss of military reputation would otherwise have been of incalculable prejudice to the country, and Great Britain must have sunk in the scale of nations, never to be redeemed, unless through exertions and sacrifices of far greater magnitude than those actually encountered.

I shall now conclude this part of my subject with some general observations. With the exception of the first American war, and the earlier campaigns of that with revolutionary France, the British army has for ages held a distinguished place in the military annals of Europe : and amongst the qualities, to which may fairly be attributed much of its success, is the dread silence of the troops when in presence of the enemy, and indeed on all occasion under arms. Our more lively neighbours have well described it as *cette affreuse silence*. A chance stranger thrown into the scene might almost imagine that they were rooted to the ground by the enchanter’s spell, so stern and statue-like is their immoveability. The heavy flouting colours, so unfit (when displayed) to be carried by the hand, are in their cases. Mere show in any way is unthought of, and every encumbrance is removed. Not a sound is then to be heard, save and except it may be the

solitary note of a bugle intelligible only to the light troops. The drum is hushed, and any other kind of music, at such a time, would be rejected as most unsuited to the deadly work they are about to be engaged in. The French leader speaks to and regulates his troops by the drum. Its bearer, with a rifle slung at his back, is at his right hand, and the charge is made to its ruffle. Our musicians, and all the non-combatants of every description, are, or ought to be, in the rear, under the orders of the surgeon for the removal, the conveyance, and the succour of the wounded *. Even these last, however hideously mangled, are generally uncomplaining. They silently abide their fate, and yield up their breath, or submit to the operations of cure, with the same equanimity†. Thus it is, that even amidst wounds and death, discipline is seldom forgotten by the British soldier. It is the word of power, the *vis unita*—in which is embodied all we can conceive of obedience, union, combination, and strength. The bundle of sticks, the strands of the twined cable, may be taken as not unfitting illustrations. Out of a herd of timid Russian serfs, crouching under the cudgel, or heavy British hinds, it will speedily produce a force of intrepid warriors, every man of whom, when familiarized to his place in the ranks, and confident in his leaders, will be made to feel as if endowed with the might and support of a whole host; and a whole host feel as but one man. This it was that led the soldiers of Alexander in triumph through hostile nations, from the confines of Europe to the banks of the Indus; and conducted the small though intrepid band of Xenophon, amidst opposing myriads, back in safety to their native country. Though the plunging cannon should shatter the front of modern armies into gaps and fragments, discipline will reunite them as if they never had been broken. The uncivilized warrior, however

* When I was a surgeon of a full battalion, there were always from thirty to forty men of that description placed under my orders, and no soldier was ever permitted to leave the ranks even for a moment on pretence of assisting the wounded.

† According to my observations, the most querulous under wounds and sickness have been the Scotch Highlanders. The Irish may be more noisy, but then it is with less plaint.

powerful in body or heroic in mind, will be but as an infant without it, and though "charging knights may as whirlwinds go," their individual prowess will make about the same impression upon a disciplined force as the electric bolt on the solid earth.

OF THE THREE NATIONS THAT COMPOSE THE BRITISH ARMY.

Foremost of these stand the English, equalling in number the other two, and for all military qualities, taking them in the aggregate, inferior to none, either of their own insulars or of any other country. The English soldier is steady, moral in a military sense, and brave. He has been accustomed to good living, but he can endure privation. His sense of honour is high, and will not brook inferiority to any adversary that can be placed before him. Of vain-gloriousness he has not a tittle, and is often a hero without knowing it, for he will perform the most daring actions as if they were in the ordinary routine of his duty, and build as little upon them as if they had been nothing else, continuing to perform them during the whole course of his military life, without uttering a boast, or preferring a claim. He may be slow in acquiring a knowledge of his business, but whatever he has acquired he firmly retains, and faithfully and regularly performs: and this has been his character at every period of our national history. It is inherent in the people, and may be found in all ranks. During the great Civil War, the chivalry of England went down before old Cromwell's "push of pike," and Catholic Ireland was, for the first time, effectually tamed into submission by his stern plebeian sectarians. These men could only be compared to the iron warriors of the Swede* at an after period. The historian tells us they had originally been composed of tapsters, decayed serving-men, mechanics, and such like; but they were the people of England whose military virtue, like an unwrought mine of the richest ore, waits only for the hand of the polisher to display qualities that have never been surpassed. In all ages the English-

* Vide Life of Charles XII.

man has been famed for steady enduring courage, which no threatenings, however imposing, could daunt, or the severest execution of arms subdue. He constitutes the body and bones of the British army, upon whom the other two nations repose, while they add to his strength, and, in contributing their peculiar qualities, bear him through varieties of war to which, without their aid, he might be found unfit. The French soldier far surpasses him in celerity of movement: but this, as I shall presently show, is the fault of his training, for he is amenable to discipline in the highest degree, and has ever come to excel in whatever he has been taught. He is on the whole a slower animal than his more lively adversary, but far more enduring, patient, and obedient. His glory, his position, is that of a fair stand-up fight, without passion, or loss of temper. If worsted he can retire from the contest without the feeling of utter defeat, but he will sustain it as long or longer than any other warrior of ancient or modern times. When in actual presence of the enemy his bearing is majestic, courageous, magnanimous—silent withal as the grave, except when he utters the battle-shout in closing with the bayonet. He then may be said to resemble Curtius in the Roman forum about to plunge into the gulph; for should the earth on which he stands open to receive him he would regard it with the same equanimity.

The Scot, and more especially the Lowland Scot, is of the same Saxon breed as his southern neighbour, from whom however he is distinguished by some peculiarities. Inhabiting a more barren country under a ruder climate, he is inferior to him as an animal, being surpassed in all the qualities that constitute bodily condition and appearance, but he excels him in hardihood, and being trained to manhood under a less indulgent system of animal maintenance, seems in that respect better fitted for military life. On the whole he is of harder mood, and hardier. He is also, generally speaking, better instructed and more sagacious; the sobriety of his presbyterian education having taught him moderation of living, and trained his mind in a severer school. In the champion-like courage of the south, when breaches are to be stormed and batteries carried by the bayonet, and the victory is to

belong to the strongest arm, he may be surpassed, but for all other military virtues he is superior, being uniformly patient, obedient, and brave, never murmuring under any suffering when there is a prospect of closing with his enemy. When actually engaged he is ardent, often even to a fault; for like the Swiss he is prone to war, delighting in its adventure, and unlike the English has often sought the gratification in foreign mercenary service. At all other times he is tractable, orderly, and intelligent, well disposed alike towards comrades and commanders. He loves the peace of military order for its own sake, and is rarely mutinous or turbulent, unless he takes it into his head that his rights in any way have been withheld, when he will be found tenacious as a village lawyer; seeking the right, however, rather than the law, and when satisfied in regard to the first, returning to his duty and allegiance as cheerfully as if they had never been disturbed.

In the border and pastoral districts of the country, he evinces all the good qualities of the mountaineer. These, from an early age, have been a land of song, wherein the young Scot greedily imbibes the legends of Wallace and Bruce, and, inspired by the poetry of his country, drinks deep of military renown. To such men may always be confided the defence of their own fields, for when arms are put into their hands, they delight in warlike exercises, and they possess hearts that never yet have quailed before an invader. A modern writer has justly described them as "being patient of labour and danger, and prodigal of life," for they are found in every land and every clime, pursuing fortune with invincible tenacity of purpose. In the actual conflict of arms the national temper is said to be less cool than that of the south. When a distinct nation, the *perfervidum ingenium Scotorum* was apt to boil over, and not unfrequently committed them to severe chastisement from their southern neighbour; for when worsted they could not brook defeat, nor retire from the contest in possession of that temper of mind which gives cover to retreat, and prevents it degenerating into total route. Even now, with all the advantages of discipline, if fighting by themselves in national regiments, it may fairly admit of a question, whether

they could display the same coolness of temper which in all ages has so remarkably characterized the English nation.

The highlander (the Celt) comes from a different stock, and it is difficult to conceive two races of men, separated often by the narrowest, or even imaginary boundaries, more distinct than the mountaineer and his lowland neighbour. The highlander has a peculiar aptitude for war. Little addicted to agricultural pursuits—for which, indeed, the nature of his country presents little inducement, and bred up in the strictest poverty—the military profession gratifies his pride, for with him enlistment is promotion in life. In his native glens he is slothful and indolent as the North American Indian, but when roused to war, he seems to shake off the torpor of centuries, and inspired by the music of his mountain-pipe (however horrible it may sound to ears polite,) and the traditions of his forefathers, he becomes filled with the most exalted heroism. When led by those who understand his character, no creature can be more tractable, faithful, and attached. Quiet and domestic, he will live at the family-hearth like one of the household animals, and depart from, and return to it, after performing deeds of arms which might grace the poet's song or the historian's page; for he is essentially chivalrous, delighting, when in his own country, in a courtesy, that may justly be called refined, combined with valour that knows no stain. In actual conflict, the loud-sounding pipe fires his blood—his whole soul is in the battle—he is intent upon killing the foe, and he will do it, or perish; for of quarter he takes little account, until the victory be decided. When amalgamated with other soldiers, and separated from the companionship of his fellows, his value as a warrior is often lost with his nationality. He is then no more than an ordinary soldier, in no respect superior to, or, it may be, even so good, as his more civilized comrades.

The Irish soldier is of high renown, and foreign nations have sought his aid, and recorded his worth. In our own armies, his excellence is acknowledged, but he requires to be reclaimed before he can be trusted, for his habits are lawless, and his temper, till broken in, ungovernable. Allow due time for these, and there never existed a more daring intrepid soldier. Danger and death are to him as sport: he rejoices in the battle, and makes game of

all the perils and accidents of war. His good humour seldom forsakes him even under the severest privations, and when the soldiers of the kindred nations would often give up in despair he will turn the whole into a jest. Full of hardihood, courage, and endurance, often with wit at will, (indeed, he is at all times noisier than the Englishman) he makes danger whimsical and ridiculous by the example of despising it. His first and greatest defect is the resistance to discipline, and the incorrigibility of his national habits: get over these, and within the three kingdoms there may not be found a better soldier; but he must have time, for the recruit is as frequently the worst as the veteran is found to be the best subject in the British army. The Irish officer of family and education has justly been esteemed the most chivalrous of modern Europe. When taken from the lower ranks, he, with all the high daring of the soldier, exhibits also some of his faults. Little addicted to the pursuits of industry, of which, from the political state of his country, he may be said to know nothing, he has been bred up in idleness, and his education is often defective. To such, the life of a soldier, with its alternations of stirring adventure, and the license of a garrison, or country quarters, has many charms. On this rock he is often wrecked, but once sobered down, he generally becomes a valuable soldier, with ready mind and steady heart to endure whatever may befall him.

The above is applicable only to the rural population, the *Sabina proles* of the three kingdoms. The inhabitants of towns, more especially of great towns, are everywhere equally vicious and depraved. Being more apt and intelligent than the peasantry, they learn the use of arms sooner, and may be more expert as musketeers, but for all the valuable and trustworthy qualities of a soldier, they fall below the homely ploughman, or the rural hind.

From the foregoing, it may at first sight be presumed, that in national regiments all that is valuable in character, or deducible from example, or inspired by emulation, would be found to reside: that the pride of country and its hereditary fame would form the soldier's character, and uphold the cherished name: but granting all this, and more, these distinctions, when confined within narrow limits, are dangerous, and have led to consequences injurious to

the general welfare. Rivalries—pride and prejudice—supersede patriotism, and the general quarrel against the common enemy may be forgotten amidst the unworthy jealousies of one another. The battle of Culloden was said to have been lost to the Highland army, through the M'Donalds refusing to charge, because they were not placed in what they deemed the post of honour ; and if such a spirit could arise, even in the presence of the enemy, and at the very crisis of their fate, the same spirit, we may fairly infer, would always be predominant under the circumstances of peace ; that the M'Donalds would then be at feud with the Grants, the Grants with the M'Grigors, and that the faction fights of Ireland would be renewed, whenever the Shanavats and Caravats, or other lawless savages, were encamped on the same ground.

Far better was the philosophic conception of the late Duke of York, which went to embody the national forces without distinction of country, under one general system of discipline and instruction ; where the amalgamation of the three nations was made to correct the faults and peculiarities of each, yet leaving enough of the national spirit to individualise the soldier ; while he was taught to tolerate and respect his comrades. I would not altogether abolish national regiments, for without some such, the men of the clans could not be induced to serve. They may moreover be made most useful as pattern regiments, for their character will ever be found to rank high, but they never, for the reasons just given, should be so numerous as to constitute the main body, or even a considerable part of any army, nor more than adjuncts, whose spirit, if it boiled over, could never endanger the general tranquillity.

Need I say, that from them the detestable lash should for ever be banished ? expulsion from the corps, implying everlasting disgrace, would meet all the ends of punishment, saving and except those crimes that immediately compromised the general safety. Let these, when they occur, be extinguished in the death of the culprit by military execution, but let his back be held as sacred from the lash as that of the heroic Rajpoot of Hindostan.

Conceived in the same spirit of the truest philosophy, has been the institution of the United Service Clubs. Had they been made

army clubs, or navy clubs, or any other of an exclusive kind, they could not have failed to spread jealousies and dissension through the general service, arising out of the mutual ignorance which exclusion ever generates ; but when all the branches have been amalgamated in one fold, and mutual association and companionship made the rule, prejudices must vanish, and men will be astonished at the intolerance of one another, which till then had obscured their minds. In future wars it will be found that a body of public opinion has been formed in them which will equally control “ the rough and boisterous captain of the sea,” and the more fastidious landsman, and neither will dare to face it, if they have compromised the interests of their country through the indulgence of professional prejudices. Had such a tribunal existed in former times, the best-conceived enterprises of service could not have failed through the ill temper and jealousies of the respective commanders, nor could the more petty malignity which irresponsible command is apt to generate in one branch of the service, have been made to vex the other, when it fell under its power. Far be it from me to say that this was general, or even common, but it occurred too often, in the early part of last war, and is not unlikely to occur again, as long as responsibility to the general service at the above tribunal is held over the heads of the offenders : but the clubs will do more than this. All officers may be said to pass through the metropolis at one period or other of their service. In former times the coffee-houses presented the only domicile, and the theatres the only pastime, or the bottle the only recreation, and, through pure ennui, the stranger was often led away by low blackguard temptations, as much to the prejudice of his health as his pocket. From all these he will be saved at the clubs. There drunkenness cannot be tolerated, nor ungentleman-like habits in any shape. He must live under the observation of the general profession, and preserve the caste and rank that belongs to his commission. The very style of living, luxurious though it be, to an officer with no fortune but his pay, will enhance in his mind the profession to which he belongs, and save him from descending hereafter into a lower walk of life. When he joins his corps, the regimental mess, that best of British military institu-

tions, which the Duke of York, during his whole life, so warmly patronised, and of which foreign nations have not even an idea; that beautiful school of equality as gentlemen at the social board, but of subordination under arms, where intercommunication conveys instruction by fellowship, instead of authority, will be found subsidiary to the clubs, as being preliminary to, and promotive of, the best interests of the army.

Let us now take into consideration the mode and terms of enlistment for the British army. It has ever been a bargain of money, and in the spirit of a bargain we have always sought to overreach and trepan the young recruit. A parental government, we might suppose, would try to save its subjects, even from themselves, when they were bent upon their own undoing; but our object seems to have been to get the soldier to sell himself for life; as if we thereby could get, or make, a better man, or render the army popular, or other than a receptacle for the desperate in circumstances, and the abandoned of society—to be shunned by all who had other hope or prospect in life. How is this? And how could a spirit so repugnant to the genius of British freedom have arisen in this free country, where the bondage even of the negro has been abandoned, and every nation of Europe, with the exception of Russia, even Turkey itself, has utterly repudiated the principle? It is, besides, completely subversive of the object it professes to have in view. If the English peasant knew, that, like the French or the German of the same class, he could only be allowed to engage himself in the first instance for a limited term of years, would he have the same dread of entering the service that he has now? or would it not, on the contrary, often be considered by his family as a not discreditable way of passing the earlier years of his life? Who, on the other hand, will now engage, but a reprobate or an outcast? Should a well-disposed youth be betrayed into it, what must be his feelings to perceive no end to his bondage, or what his refuge but desertion—or solace, but drunkenness—or what his probable conduct but crime? Had he the termination in view, he would in all probability cheerfully submit to the period of service; or, with a pension in prospect, renew the engagement, should a military life be to his taste; but now,

all before him is a blank, as hopeless as the negro slavery of olden time, or that of the Russian serf when drawn from his native village to which he is never to return. How can such a violation of British liberty, and affront to its constitution, have been permitted to spring up in this free country? The patriotic Wyndham once obtained protection for the subject, by limiting the period of service,* but every bigoted politician, to whom the very name of liberty in any sense was hateful, and prejudiced old soldier, took the alarm, and never rested till the saving enactment was rendered null and void: *Cui bono* again we may ask? Is the army better filled by it? I can attest from what occurred last war, that when our forces are again to be recruited by a bribe of money under service for life, the same game will have to be played by the man who has sold his body, seeking his discharge through every villanous art, to sell it again, and the authorities seeking to detain him. The whole army practised these. Artificial ulcers of the legs were all but universal among young recruits, and spurious ophthalmia was organised in conspiracy so complicated and extended, that at one time it threatened seriously to affect the general efficiency of the forces, and was in every respect so alarming, that the then military authorities durst not expose its naked features to the world. These are the results, and ever will be the results, while human nature is constituted as it is of service for life. Let the legislature interfere; and should military men, still blinded by prejudice, resist the improvement, show them that there exists a power superior to the bad customs of the army, or the tenacity of its officers. The cruelty, the hardship, touches not them—they can depart when they please, and even be paid for going; and when that is the case, the satirist has caustically remarked, that the grievances of others can always be borne with the most perfect equanimity. The country, which pays all, is here the proper judge; not the officers, who are a privileged class, and, like other men, think only how they can best defend and uphold their distinctive position. I am well aware that the main argument in justification of

* The proposed engagement was in every case to be for seven years, or during the war.

unlimited service is the nature of our Colonial Empire, rendering the relief of men who have served out their time a matter of great inconvenience and expense; and during war, it would not only be inexpedient, but unfair to the country to permit them coming away. Let, then, the military engagement be so worded as to include not only the prescribed term of service, but also any war in which the country may be actually engaged. This must be submitted to; the safety of the country requires it. In peace there can be no difficulty in establishing at any, or all our colonies, annual reliefs for discharged men. The tenacity with which men are held in the army is absolutely ridiculous. One would suppose that at the termination of a war, when the disposal of discharged men, many of them against their will, becomes a consideration of no small difficulty, there would be little objection to permitting all throughout the army, who had grown disinclined, to retire from it. But no. The discharging is restricted to certain portions or divisions—they may be the best or the worst; all others are held to the bond; they may have become drunken, useless—a nuisance; it matters not, there they are to remain: and thus it is that the army, holding out advantages of pay, and maintenance, and comfort, which ought to make it the delight and pride of the hard-wrought rural population, is dreaded by them as a snare into which they will never enter but through delusion, or remain in it but through force. Let it henceforth be proclaimed to the soldier that he still remains within the pale of the British constitution, which forbids his selling himself for unlimited service—in other words, for life—and then it will be seen how soon a better class of men will seek admission into the ranks; or, when they have served out one limited term, delight to enter for another in a service which respects their best birthright, and seeks the extension only at stated times, with freedom of choice, which, unless under the pressing circumstances of war, cannot be contravened. In the present times, more especially, of sparring with the United States of America, one of the most probable fruits of service for life will be the transfer of the Canadas. When the Englishman is called to defend the frontier, and sees the American farms before him holding out all their temptations of free occupancy, he will as

heretofore go over, not improbably with the whole picquet—not to fight against his country, but to achieve his emancipation; but if he left other farms behind him, to which, after the current term of service, he knew he could return, preserving meanwhile his nationality, his status, and character, with right or prospect of a pension, there can be little doubt he would be true to his colours; and in this way, instead of discontented soldiers of suspicious fidelity, free military colonists would be formed, who would always prove the best defenders of the country.

So it is in regard to punishment, and the much-mooted question of flogging. The officers are not flogged,—we might as well talk of flogging the College of Physicians, or the Commons in Parliament assembled,—and they of course make very light of it. Within the last half century, the lash was in universal requisition. It was then the approved maxim that whiplash made the soldier, and the commander who spared the whip was to lay his account with having a bad regiment: in fact, the cruel discipline of the army outraged human nature, and stained the national character. The fruits were *strikingly* characteristic of the seed—universal depravity, desertion, crime—the halberts. Unless in the strictly national regiments, where character still bore its value, the common soldier was a ruffian, than whom, when he came to be discharged, a more dangerous character could not be received back into the bosom of his country. Some regiments, under more enlightened commanders, at length tried the experiment of diminished flogging. The effect in many instances was magical, for crime disappeared along with the lash. Public opinion was brought to bear upon the infamy of the practice, and now, with one tithe or less of the cruelty, we have in a tenfold degree a better army.

'Tis strange to trace the habit of cruelty in the mind from mistaken laws (the wisdom of our ancestors), and the early discipline handed down to us from the wisdom of Solomon. The gibbet used to be the monitor—almost the only one, of the full-grown man—the halberts of the soldier—the flogging-block of the youth. We have always been a flogging, or a flogged nation, and early *impressions*, we all know, form the creed of after life. The practice even now too often begins in the nursery, and grows with our

growth, through all our progress in the schools, up to manhood: only here the order is amusingly reversed, and the plebeian vulgar are denied the flogging-block, which is kept exclusively for the magnate of the land. The former, it seems, have discovered that in what are called the Lancastrian seminaries the spirit of emulation—in other words of honour—suffices well for all the purposes of teaching—for all that the rod inflicts upon the *ingenui pueri* of the chartered establishments. In fact, flogging is so easy and compendious an operation, saves so much trouble to the instructor, and the power is so gratifying to human pride, that whoever has flogged men, women, or children (for the exception of the negro women is yet a very recent one), will continue to flog as long as he is permitted, and insist upon its being the perfection of human discipline. As a punishment for the high-minded youth of England—I speak not of the correction of children—it has been denounced by others in the name of decency* and common sense, and more especially by the English poet, Cowper, who says that “the management of eighteen is difficult—the punishment obscene:” and indeed it would be difficult to stigmatise in sufficiently strong terms such an exhibition as it affords on the person of a youth arrived at the age of puberty. Strange, too, that the high-minded, the high-blooded youth of England, should have it all to themselves, for neither the Scotch nor the Irish at that age would submit to it. I dwell upon it here, because I believe the vile practice of the schools familiarises the infliction to the minds of those who afterwards become officers in the army and navy. But to return to the subject of military punishments.

No one can doubt, that for infamous crimes there ought to be infamous penalties, and to them let the lash be restricted; not to the greater crimes, but to the meaner and the disgraceful. The mutineer, when his conduct compromises the general safety, must be delivered over to military execution; the incorrigible deserter may be safely committed to penal service in the West Indies, or the coast of Africa; and should the pseudo-philanthropist interfere

* Vide Mathew's “Diary of an Invalid.”

with the cant of false humanity, let him be told that the best and bravest of our troops have too often been sent there, as to posts of honour and duty, from which they are hereafter to be saved by the substitution of the criminal and the worthless. The other nations of the continent, who have not these outlets, conduct the discipline of their armies without flogging; and why should not we? They, it may be said, cultivate the *point d'honneur*: and does not the germ of pride and honour reside as well, and better, in the breast of the British soldier, distinguished as he has ever been for fidelity to his colours, obedience to his commanders, pride in his corps, and attachment to its very name? For what but the approbation of his own mind, in which all honour consists, could have led him to endure the lengthened trials of last war? Take the Peninsula, for instance, with its six years of service. Have honours been heaped upon him, or promotion been his reward? To have promoted every soldier of approved gallantry in that army, would have left few indeed in the ranks; but a medal, or decoration—no matter how intrinsically valueless, if commemorative of the achievement, was his right, and the advancement of a term of service, as leading ultimately to a pension, ought to be his reward. Who could now think of subjecting these men who conferred such lasting obligations on their country, to the lash for common military irregularities? It almost savours of impiety; for their services to the cause of the country and to that of mankind, in the then state of the world, were inestimable. They were literally the bravest of the brave, and their embattled front, could they have been opposed, would have stemmed that of the Macedonian phalanx. I speak not of the infamous characters that infest all armies, who would, if undeterred, carry rapine, rape, and murder, into the dwelling of the peasant, whether friend or foe, in every country. For them, let the gallows and halberts of the provost martial be ever held up *in terrorem*; for all compassion would be miserably misplaced. The infamy of the punishment would be excellently adapted to the infamy of the crime, and were it restricted to similar delinquencies—to marauding in every shape—these would soon cease to be much practised in the British army. For all other crimes not compromising the

general safety, the minor punishments of confinement—solitary or in irons, penal labour, fines, drills, loss of service, deprivation of indulgences, &c. &c. would surely suffice. The deserter to the enemy, and the mutineer, as I said before, must be subjected to the last extremity of martial law; and better far that he should so suffer, than live branded, degraded by the lash—from whom no good service can ever again be expected—his disgrace being inefaceable, and his spirit broken for ever.

I shall now conclude the subject of military punishment with some further illustrations and examples. After the termination of the expedition to Holland in the year 1799, the 5th regiment was established at Silver Hall Barracks, in Sussex, where a marauding soldier of the Light Company broke into a neighbouring farm under the cover of night, severely wounded with his bayonet the woman of the house, when she tried to save some of her property, and perpetrated as much outrage as a single man without accomplices could well inflict. There can be no doubt that such a ruffian should immediately have been given over to the civil power, and hanged, or executed before the assembled troops by sentence of a general court-martial; but he was brought before a court-martial of the regiment, and sentenced to receive a thousand lashes. When brought up for punishment, he stripped as if in scorn, and presented as fine a model of compact form, hard muscle, and dark thick skin, as ever I beheld. The drummers were well-grown sturdy lads, who had always performed their duty well, and to them, after the punishment began, he particularly directed his abuse, daring them to do their worst, for they would never extract a single groan from him. Seven hundred and seventy-five lashes were most severely inflicted, when perceiving from his countenance alone that nature was giving way, I had him taken down and carried to the hospital. In a few weeks he was reported cured, and the commanding officer declared that the sentence should be inflicted to the utmost lash. He was accordingly brought out again. It was winter, and the snow was on the ground. He was tied up with his back to the wind, and the punishment began. At the first lash the newly organised skin

gave way, the blood streamed down his back, and he who on the first infliction was all defiance, now writhed and cried out. As the flogging proceeded, the lash became clogged with blood, which at every wave of the drummer's arm was driven in showers by the wind over the snow-covered ground; his cries became actual yells, and the integuments of his newly-cicatrized back were cut literally in pieces. I stopped the punishment when he had received sixty lashes: but his second cure was now a very different affair. Healthy suppuration could not be established after such reiterated injury, and sloughing and deep-seated abscesses were formed amongst the great muscles of the back. When I left the regiment, on promotion, some months afterwards, he was still in the hospital, a poor hectic wretch, utterly broken down from the terrible effect of the second flogging. I never learned whether he ultimately recovered. Any summary form of death that could be inflicted would have been no more than such a ruffian richly deserved, but, in a Christian land, not such a death as appeared impending when I came away. In his published Surgical Lectures, Mr. Guthrie has recorded the case of a soldier who, in the regiment of which he was surgeon, had received in the course of his service 15,000 lashes! And what was still more shocking, the poor fellow had always been much esteemed in the regiment as a daring gallant soldier, a fellow "of excellent heart, the very beau-ideal of a Grenadier, but he could not resist the temptation of spirits, and at any time would go through fire and water to obtain it." With such a subject before them, how hardened must have been the hearts, how seared by the inconsiderate habit of cruelty the mind, that could thus persist in lacerating the flesh of a fellow-creature, while every new infliction was confirming in him the obduracy of crime, as well as the horror and disgust, or contempt, of those upon whom it must have been intended to make a salutary impression! No doubt, when out upon the illicit rove after spirits, or petty plunder, he ought to have been flogged back to his quarters with his coat turned by the provost-martial, and then the jeer of his comrades, instead of their sympathy, might have corrected the habit.

"For many years of my life," said the late Lord Wil-

liam Bentinck, in his evidence before the House of Commons, "I, in common with ninety-nine hundred parts of the officers of the army, considered corporal punishment as the sole security against *every* military distemper, and as the sole guarantee for the efficiency and good regulation of the army. It is only from reflection, from the effects of discussion, from the observation that since that time, though corporal punishment has diminished a hundred, perhaps a thousand-fold, discipline has decidedly improved, and the soldier treated like a rational being, and not as a brute, that my own prejudices and that of others have given way. I now feel confident that this degradation will speedily disappear before a more reasonable and enlightened legislation in the British army." Taking the case of the above Grenadier, we may say, that in ancient Rome both the civic and the moral crown would, in all probability, have been his. In France, the legion of honour would have been open to receive him. With us it would have been natural to look for the ring of merit encircling his left arm, or the medal decorating his breast: but he, poor fellow! wore no such honour externally: we must have doffed the habiliments to arrive at his distinctions, and then it would be found that his back had been scored and crimped with 15,000 lashes. Thank God, this is now a tale of other times, for if told of the Ashantees or the Algerines it would scarcely be believed. I could add my own ocular testimony of similar enormities; but enough has been said by recent writers to make it impossible for them ever to occur again. It would appear in this case, that not all the flogging he received could shake his fidelity to his corps and affection for his comrades. From the pulpit we hear much, and very properly, of the merit of Christian forgiveness: I question if a brighter example ever was exhibited than under the circumstances of this poor soldier. We may have seen something like it in the canine race—rarely in the human. While a regimental surgeon I lived among common soldiers, and can vouch that I have never in any walk of life fallen in with better men: they certainly could not be called sober men, but they were usually of excellent temper, cheerful, patient, and obedient, always willing to assist, and bearing the severest hardships with an equanimity

that could not be surpassed. Their attachment to comrades and commanders, when deserved, was always most exemplary, and they would prove it even to the death amidst the severest trials of war and privation of their calling. It was my opinion, then, and is so still, that, in many of the best moral qualities, they were greatly superior to men of their own class in civil life.

But why have I dwelt upon these things, after acknowledging that the practice of them was passing away with the age that produced them? I do it as a caveat against relapse into similar enormities, and to prove that cruelty ever defeats itself, by brutalising the minds equally of the victims and their oppressors, generating a spirit of resistance against what is felt to be injustice, and thereby increasing and aggravating the very crimes it was meant to extirpate. There is, moreover, a fashion in cruelty, which makes it the established creed of an age, and sets to nought all the suggestions of good feeling or common sense. It was not very long ago, that the sovereign of these realms was led to consider the African slave trade as one of the brightest jewels in his crown. His peers, for fully seventeen years, when its extinction was voted in the Commons (often by very small majorities, it is true) manfully stood by their King, and the voice of his Bishops was mute when the monarch withheld his smile. Who would now stand up to defend anything so monstrous? In the last century, a poor woman of good character, whose husband had been torn from her and her starving children by a press-gang, was hanged by the neck for pilfering some trifling article from a shop on Ludgate Hill. Now times are changed, and the pseudo-philanthropists have it all their way. He must, indeed, be a determined candidate for the gallows, who can, now-a-days, contrive to get himself hanged. To fire a dwelling in the dead of the night, with the chance of burning all its inmates, or even a town—to commit the most cruel robbery or rape, if unaccompanied with actual murder on the spot, will not do; and our most merciful judges, who, in former times, hung up men and boys by the score, cannot bear that these interesting unfortunates should be lost to their country (so thinly peopled!) for more than a short term of years.

She must have them all back again *. What a mockery is here ! And is the legislature, which so long permitted the judicial bench to revel in murder according to law (now that they cannot hang) to admit of their slurring over the worst crimes with punishment that in any other country would be laughed at ? In such a land as this, where the most meritorious can with difficulty procure bread, the convicted felon can never be restored to usefulness, for the brand is indelible, and any transportation short of transportation for life is mere drivelling. Let the mitigation, when the case deserves it, be extended at the penal colony, where character may be acquired anew ; but bar the relapse into crime, and save the culprit from himself by return to the country where there can be no other resource.

In military life the case is different. The crime of desertion in a thoughtless youth is never infamous amongst his companions, and may be well expiated by a seven years' service in a distant colony. When he is restored to his place in the regular army his crimes will have been atoned for by the punishment, and he may still become a meritorious soldier. While on home service the lash by sentence of a court-martial certainly could be dispensed with altogether. I mean by the judicial sentence of a regular court, for all the minor crimes of disturbance and nuisance in barracks—petty thefts, malingering, and similar delinquencies, would be far more effectually corrected amongst the men themselves,—by what was called companies' courts-martial, under proper regulation. For desertion there should be but one certain unvarying punishment after conviction—penal service in the colonies—never for a shorter period than seven years : and if fourteen, twenty-one years, or unlimited service at Sierra Leone, the Bay of Honduras, St. Lucia, or some parts of Jamaica and Trinidad, would not meet the worst cases of the kind, we must indeed be at

* At the time this was written there had been a succession of trials for stealing money-letters at the Post Office,—a crime of the most heartless nature and dangerous tendency. The punishment had uniformly been death without remand, and most richly would it have merited transportation for life ; but this was not awarded in a single instance.

a loss. The best part of this new order of things would be the saving of better men, who have so often been sent there to be sacrificed. In actual war, when the people of the country, from whom all provision must come, are to be protected and the army subsisted, punishment to be effectual must be summary, in as far as possible immediate; a well-organized, vigilant provost-martial, in constant patrol, can then be the only security against military disorder. Magna Charta, the Bill of Rights, the Habeas Corpus, and even the Riot Act, must all be reserved for home reading. In the field, despotism is safety, and prompt punishment, without being actually cruel, becomes doubly terrible when the effect is immediate, for the old maxim of *bis dat qui cito dat* is still more applicable to punishments than to rewards.

When I was surgeon of the 67th Regiment, in the St. Domingo war, I saw companies' courts-martial practised with the best effect in repressing all military disorder affecting the men themselves, who must ever be the best judges of what immediately concerns their comfort and happiness. They are now, I believe, everywhere discontinued on account of the abuses to which they led through default of due regulation; but if they were only to be held under the sanction of a commanding officer, with due limitation of punishment, a non-commissioned officer always for the president, and men of the good conduct warrant, for members, I cannot conceive a better court-martial for that class of crimes. It would be taking the men along with the authorities for their repression, and they would doubly feel the "esprit de corps" in being thus constituted members of the military body to guard its laws and uphold its respectability. Public opinion will cause itself to be respected even amongst the common soldiers of an army; and its value will be best appreciated whenever men are, in as far as may be, made to be judges of one another. The lash, when used judicially, is a vile expedient; for every such exposure is the loss and ruin of the man. It has destroyed many a gallant spirit, and never yet reformed a bad one; for, however contrite and repentant the culprit may have been before this public disgrace, he is contrite no longer. Malignity and disaffection then take possession of his mind; for he feels that he has been dis-

graced and treated like a beast. It hardens the criminal of mature years, and makes the youth malignant and cowardly, or reckless. Let it henceforth be expunged from the rules of discipline, and, if that were once done, there can be little fear of the castigators soon being led to discover far more salutary and efficacious methods of correction.

OF THE SELECTION OF THE SOLDIER.

The soldier can scarcely be enrolled too young; for then instruction is easy, and military habits so readily formed that they become a second nature: but his efficient military life is comprehended between the ages of twenty-two and thirty-eight. When forty years have been attained, few indeed are fit to undergo the fatigues of a campaign, and, if retained in the service, they must seek the repose of a garrison or veteran battalion. Nativity, breed, health, and constitution, are all primary requisites; but for these, in the British army, we have but one rule—stature. Please the eye in this respect, and all is satisfied. We have decreed that there can be no heroism—no virtue or good quality in military life, under five feet four or six; in fact, that the show is to be every thing, no matter what the reality. All will admit, that to enrol the short and the feeble in the military ranks would be a grievous mistake; but if in the short and the strong are often found the most enduring qualities, combined with spirit, hardihood, and health far superior to taller men, instead of being the rejected they ought to be the chosen of the British army. For every kind of skirmishing and light manœuvres, smallness of size is actually a high qualification—bulk, implying difficulty of cover, the reverse. No man, provided he can run and carry his arms, can be too small for rifle practice. The best of the Highland marksmen are small, actually dwarfish; but where could be found such men of the rifle as the little mountaineer, whether as regards his hardihood or his bravery? Let not all this be taken for declamation and special pleading rather than argument; for look at the French (and *fas est ab hoste doceri* is ever a safe maxim), where the little voltigeur, that skirmisher *par excellence*, so far from being the rejected, has

superior pay as one of the *élites*, so great has been his utility, and so justly appreciated has been his value. The short strong man is in fact a bundle of thews and sinews. In the animal world we may liken him to the pony and the terrier, gifted with hardihood and health to wear out and endure beyond his taller comrades. He may be despised by the martinet on the parade, but he will be respected and feared by the enemy in the field, and he ought to be duly valued by his country. Every regiment in the service should have a body of such skirmishers armed with a rifle of the same calibre as the musket, to be ever on the advance before the line is formed, or to follow in pursuit as soon as the attack has been repelled. Surely the time has at last arrived for our ceasing to remain the passive victim, instead of being the active agent of that missile force, the only one that can justify distant firing, for when directed by trained men it is as destructive or more so than the musket in close quarters.

I shall here, from the early history of last war, adduce some illustration of the points laid down under some of the foreign heads.

In the campaign of 1799, when the Duke of York took the command of an allied force of English and Russians, I was present at what was called the first battle of Bergen, on the 19th of September. The latter had landed two days previously in the highest possible order and beauty, and as they were marched up the country through the British cantonments toward the position of the enemy, some of the men, through long confinement on board-ship, had become foot-sore, when their protestations against being left behind (the meaning of which, though spoken in Russian, it was easy to comprehend) became vehement and affecting, and their officers, who all spoke French, swore, grinding their teeth, that on the morning they would shew them what a Russian charge was, and administer the bayonet *bien impligné*. The morning came, and before its dawn the Russians had driven in the enemy's advanced piquets. The 5th Regiment, of which I was surgeon, had marched from its cantonment as early as the Russians, and with the first light found itself in the cover of a Dutch village, close upon the flank of the first of a line of field redoubts (but with a canal and its dyke between) which the

Russians were preparing to storm. On they came, apparently without any order of lines, closely packed together, and while the guns of the redoubt ploughed deep through the mass, and its musketry raised a scream of fire, they, with a deep halloo, the only reply, poured into it and over it like the rush of a deluge. The next redoubt, and the next, were stormed in like manner, until the Russians, sweeping over as we heard eleven miles of country, and far beyond our men, had taken upwards of thirty of the enemy's cannon; while we stood doing nothing, without notice or orders of any kind from our own staff. The battle, however, appeared to be gained, but alas! we were not there. Of the Russian mode of attack and their early hours, we seemed to have taken no account. Our battle did not begin till mid-day, when we found our allies in full retreat, their commander left behind a prisoner, and they themselves furious at having been, as they thought, betrayed; and from that time all confidence was lost on the part of our brave allies. The 5th Regiment had not long before returned from the Canadas, between 200 and 300 strong; and when, on the taking of the Helder by Sir Ralph Abercrombie, a second expedition, commanded by the Duke of York, was formed, they were speedily filled up to two overflowing battalions by volunteers from the militia; the officers in many instances accompanying the men, for bringing whom they had obtained regular rank; but it was a business of great hurry and confusion, no time having been allowed before embarkation to change the distinctive facings of manifold uniforms (of which there were fac-similes in all the other regiments), to make the men known to their new officers, or to one another, or even to get quit of all the pernicious bounty-money they had obtained for volunteering. There was, however, no hesitation on their part, and no troops could have shewn a better countenance than our young militia-men advancing to the ground, expecting, no doubt, to be regularly opposed, in a fair stand-up fight, by force like themselves; but when they arrived upon a field actually teeming with fire from an invisible enemy, while it was swept by more distant cannon, manœuvred with admirable rapidity, and enfilading them at every turn; or when they gained the cover of a dyke, driven from it by

the vertical fire of howitzers, it would be difficult to describe their astonishment and consternation. Meanwhile, although the ground seemed all fire and smoke, not a soul was to be seen, except officers, as we believed, occasionally directing by signals, or riflemen flitting like imps from amidst the sand hillocks from cover to cover, in order to gain a nearer position. The day was spent in this cruel, vexatious predicament, without the possibility of relaxation or defence, except from the dykes, which, luckily for us, everywhere intersected the country, and, towards its close, when we were ordered to retreat to the position we had left in the morning, I verily believe that if the apparition of a French rifleman had risen up amongst our new troops, so stupified and confounded, as well as slaughtered, in a six hours' combat had they been, they would have fled like frightened children. This was a terrible state of things for the old 5th, who, from the time of the battle of Minden, had been distinguished in every field. A rigorous examination was forthwith instituted, when it was found that the newly-joined militia-men had never as soldiers fired a ball-cartridge in their lives. They knew the business of the drill and the parade, but that was all, and that could little qualify them to cope with such an enemy as was then before them. Through the indefatigable exertions of the old officers, in a few days they were made better. The great battles of the 2d and 6th of October (where, being in a position, they saw without being particularly engaged), followed in succession, and on the 11th of that month, when at the affair of Winkel, the French attempted to turn our flanks by the Zuider sea, and occupying some extensive bean fields, were attempting to play the same game as on the 19th of September, these same men, now that they knew what their enemy was, gallantly drove them out at the point of the bayonet, and would have punished them much more severely, but again for the protection of some guns under which they rallied, after having been driven through more than one canal, up to their necks in water.*

* The affair of Winkel is so illustrative of the value of book manoeuvres (when I was a volunteer I believe we had eighteen of them) when in presence of the enemy, that I shall here relate it exactly as it befel the 1st Battalion of the 5th

The foregoing can only be taken as the narrative of an individual regimental surgeon, of what he actually saw in that part of the line where he happened to be placed ; but even now, after an interval of more than forty years, it must be confessed that our

Regiment. There was a good deal of firing in the advance, from whence wounded men were being brought in ; and we were waiting for orders in the cover of a village, when a staff-officer galloped up, directing us to advance, for the enemy were turning our left, and we were to drive them back. We advanced accordingly along a broad sandy road, in a column of companies, until a well-directed dropping fire (which struck down several men) came upon us from an invisible enemy out of an extensive bean field on our left in front. The battalion was halted, and street firing ordered into the bean field. (To the general reader I may as well explain, that street firing is, or was then, conducted by the leading company delivering its fire, then retiring to the rear, making room for the next in succession, until all had thus moved up in turn, and the one that first retired had come to the front again.)

This was accordingly begun, but as some could not be made to understand the order, others mistook it, calling out that retreat had been ordered, and many would not obey, firing from where they stood ; so in a very short time we became as complete a medley as ever was seen. The enemy, for a moment, seemed puzzled (for the firing did not increase) at the strange performance that was being enacted before them ; but indecision was none of their habits. They rose from their cover with loud cries, the bean stalks seemed instantaneously to be converted into armed men, and we were evidently on the brink of something very serious. Our commander, the Honourable Edward Bligh, a man of the most chivalrous courage, had lately joined from the Guards, and had never, I believe, seen any service beyond the parade in St. James's Park. He proved himself, however, equal to the occasion. Two very young lads carried the colours. He instantly seized upon one, and giving the other to our trusty veteran adjutant, called upon all to follow. The rush was made with all the good will of British soldiers, and the foe did not stand a moment ; they were driven in the way I have above described. I never served with our gallant commander again, but I will venture to say that, go where he might, he never from that time attempted another book manoeuvre under the fire of the enemy. I am not affecting to sneer at what I may probably be told I do not understand, and believe that all book manoeuvres, in giving system to instruction, have their use ; but they are useful, not in the particular application for service in the field, but as habituating the soldier to every variety of formation at the word of command ; and in this sense their value must be manifest to every one.

I have said above that there were eighteen manoeuvres. I would beg to add a nineteenth, which, I think, would go to supersede some half-dozen of them, and that is a steeple-chase on foot, carrying the ordinary arms. It certainly would be at issue with the pipe-clayed belts and trousers, and its best recommendation would be the incompatibility. The martial youth of ancient Rome, when covered

shameful deficiency of field artillery, and our utter ignorance of the enemy's tactics, was then as gross and stupid as can well be conceived. Although pounded and torn by the enemy's cannon, on the 19th of September, there was not a single piece to reply, at least within our ken, in any part of our line; and notwithstanding we had not very long before been subjected to a course of decimation from the American rifle, of about seven years' continuance, to say nothing of our more recent experience in the campaigns of 1793-94, there did not at that time exist such an animal as a rifleman in the whole British army: and here we may in part penetrate the secret of the French successes at the beginning of the great revolutionary war. There had been no time given to form their new levies into regular battalions, disciplined according to the heavy system then in vogue; a new one was therefore invented, better adapted to the national character, and every new mode of fighting, from its disconcerting and disappointing, and I may add astonishing the adversary, stands a fair chance of proving successful. With the French it was eminently so. The heavy continental armies stood stiff and stalwart, straight as hop-poles, firing Prussian platoons at the word of command (about as foolish an act as mortal man was ever made to perform

with dust and perspiration in the exercises of the Campus Martius, plunged fully accoutred into the Tiber, and there sought the solace and delight of its waves. So do now the hardy North Americans in the rivers of their country, during their hunting excursions. So did the active voltigeurs of France during the whole of last war; and so will the energetic soldiers of Britain, when systematically trained, and inspired by example. It would, indeed, be a stirring sight to behold these men in their native hardihood, like gallant hounds, clearing the thicket, surmounting the rock, and making as little of the river as if it were dry land. The shine of the uniforms might be dimmed, but the men themselves would be incalculably improved; and her Majesty's Guards at Windsor might boast that they were fit to encounter every casualty of war, when, in such a game as the above described, they could carry in their musket a dry cartridge across the summer fords of the Thames. The light infantry, at least, might be trained to do it; for swimming in all its feats could easily be acquired by the young in a single season; and when our youthful volunteers have learned to run such a steeple-chase, and to fire the musket with accuracy and rapidity, they need not fear comparison with any troops whatever. The elder citizen levies must be reserved for the defence of ports and garrison duty.

in a contest for existence), to be stung to death by the Gallic rifle, whose accompanying cannon, always superior, crushed and annihilated what the rifle had failed to destroy : and the battle in these early days was thus often decided before the disciplined main body on either side could be brought into action. The immortal words spoken at Waterloo, "Up men and at them!" and the lesson they conveyed, had not then been heard amongst the starched and stiff soldiers of the day, and it would have been esteemed degradation to fight the enemy otherwise than according to the approved rules of war. The swarm attack, as it is called, was then the game at which, from their acute and lively character, excelling that of all other nations, they were so well calculated to play, and by it they both astonished and destroyed the armies of the Continent. When in after years the firmness of the British battalions brushed it aside, and grappled with their main body, we certainly gained the victory ; but that victory must have been achieved at a greater expense of men than if we had fought them in the first instance with their own weapons, and turned the tables upon them before they had done their worst, and inflicted upon us heavy loss. That we are well qualified to do so may be seen from the joy and animation that ever pervades our light infantry companies when ordered out to skirmish. The soldier then, who before stood a machine, feels at once that he has been elevated into a man—an intellectual energetic man, with individual agency, and an object in view : and every battalion soldier, with the exception of the grenadiers (always to be the reserve and mainstay of a corps), could easily be made to act the same part when necessary. When brought face to face with his enemy, the question of life or death will often be decided by the priority of fire, and his arm should be instantaneous. If self-possessed, there can be little fear of its also proving unerring.

The French cannon was generally as effective as their tirailleur force, and in almost every battle we have been outnumbered in respect to guns. I believe there is not an instance, in any engagement between the two nations, of equality in that mighty arm on the part of the British. The British field artillery in the Peninsula was, I believe, the best the world ever saw—the discipline—the

courage—the strength and endurance of the men gave it incontestable superiority ; but where the French count battalions, we can rarely muster companies. It is the mightiest arm of war, the grandeur of its engines, “whose rude throats the immortal Jove’s dread clamours counterfeit,” renders it particularly adapted to the stern majesty of the British military character, and if we cultivated it as much as the French, our battles would probably be shorter, and cost us less : its sublime explosions, so unlike the chaff of distant musketry, tell the tale of terrible execution, and the appalling sounds are no longer mere noise, for they will spread terror and consternation throughout contending armies. The first turn given to the battle of Fontenoy, against the British, is said to have been caused by the furious firing of some guns with blank cartridges only (the metallic ammunition having been temporarily expended) from a particular position ; and it has often been seen that when two lines of equal force are engaged, the unexpected opening of artillery, on the part of the one or the other, will at once decide between them. It is an arm which Britain should ever strive to make her own, for it will ensure the victory on every open field : thus sparing the expenditure of her soldiers, and amply rewarding her for all the cultivation she may have bestowed upon it.

EXERCISE, DRESS, AND ARMS.

OF THE EXERCISES OF THE SOLDIER.

UPON this point it is difficult to speak without reprehension whether we consider the immense importance of a well-regulated system of training, and its bearing upon the moral and physical powers, the happiness, the efficiency, and well-being in every sense of the soldier. In the celerity of well-combined movements resides the power, the might, of disciplined armies. Without this indispensable attribute what are they worth? Nearly a hundred years ago, Marshal Saxe, the first military authority of his day, declared that the time was approaching when Europe would be gained, not by the arms, but by the legs. The Prussian Frederick spent his military life in affirming the maxim, and Napoleon added some illustrations which the world will not soon forget. But is rapidity of movement the creed and practice, even at this moment, of the British army?—the chief end of the soldier, the object of all his best instruction, without which he is literally nothing in the field, but with it he is qualified to turn the tide of war, and to change the destinies of kingdoms? The very purport of the existence of the foot soldier, the alpha and omega of his being, is to march. In that word is comprehended the sum total of his presence with an army on service, where all are presumed to have had the ordinary preliminary instruction. The disciplined army that can march the best, must, *cæteris paribus*, according to the simplest mathematical principles, have the best of it in every movement of troops; but with *cæteris superioribus*, the result must be as certain and demonstrable as in any proposition of Euclid. How precious, then, to cultivate, how indispensable the possession, of this native faculty, without which all military instruction is vain, and with it, the palm is at once transferred from

the stronger to the weaker side, which has thus been made the stronger. At the beginning of the great French Revolutionary war, the children of France—literally the children—sported round the heavy lumbering Austrians, and destroyed, or led captive, their giant troops as so many stall-fed cattle. Napoleon darted out and in of their formal lines like a Will-o'-the-wisp, till the end was the destruction or captivity of the soldiers, out-manceuvred and astonished at the newness of the lesson, and the boldness of their puny foes;* but is it to be thus with the sons of Britain? Are we to wait till they choose to place themselves within our grasp, and let them sport in mischief round our chafed battalions, when we ought to have the power and the faculty to sport as they sport, and better, in making them feel the grasp their ingenuity would fain enable them to elude? Every British soldier ought to be made the best marcher in Europe, or persevere in the exercise till he become so. He must also keep it up, or resign the palm to better soldiers; but it is in the power of every one to preserve the advantage, for walking (in other words, marching) is the most native and easily called into play of all our faculties. All drilling should be made subservient to it, for when otherwise, it is futile; and slow movements of any kind, except at an execution or a funeral, should be held to be worse than ridiculous. The soldier who has remained for weeks or months in his barrack-room, without ever performing a march, has to a certain extent lost that faculty, and is so far unsoldiered. It should have been his daily practice, and then health and strength would have been the result. The young soldier at first might feel fatigued, but it would not be that fatigue of exhaustion which results from expenditure of the synovia of the joints, but only the tiredness incidental to want of use; for a man, and more especially a youth, may grow tired three or four times in a day, yet be fit for exertion

* Early in the year 1794, I had the medical charge of a dépôt of French prisoners at Ghent, in Flanders, when so young and puny were the men, I am satisfied the average height could not have exceeded five feet three or four, if so much; yet this very description of troops, with restless indefatigability, kicked us before them like a football through Flanders and Holland into Germany, destroying in their course full three-fourths of our army.

again; but if once fatigued, he cannot be driven to renewed exercise without injury to his health, and the risk of fever. Let these be attended to, and then, as the men improved in the faculty of marching, they might be classed in the ratio of their comparative superiorities, until a class could be formed capable of pedestrian feats that would far outstrip the ordinary marching of armies, and set at nought all the calculations of a slower enemy.

OF THE DRESS OF THE SOLDIER.

The uniform of the British army is as faulty, in some respects more so, than that of the other armies of Europe. The colour, in the first place, besides being the most expensive, is inappropriate, and unsuited to the sober unpretending character of the country; for a man clothed in scarlet exhibits the dress of a mountebank rather than a British warrior going forth to fight the battles of his country. Besides being the garb of a dancing-master, or a strolling play-actor, it is the worst adapted for any hard work of all the colours, as it immediately becomes shabby and tarnished on being exposed to the weather; and a single wet night in the bivouac spoils it completely. The heavy cross-belts, one of them to suspend a bayonet, so light compared with its tackling that the wind might almost blow it away, is worse than useless, being an abuse of power, as if the soldier was not sufficiently loaded with the manifold trappings laid upon his back when he stands forth in heavy marching order, and every unnecessary one ought to be held as mischievous, because impeding and deteriorating his general efficiency. These things being matter of plain common observation, should be corrected; and in our own rifle corps, we have a beautiful specimen of what the uniform of the soldier ought to be: its dark-green—its light black belt and cincture round the waist—the ready convenience of the cartridge-box,—all call for its general adoption in the British army. One advantage would be, the banishing pipe-clay for ever from the army,—as absurd and unwholesome a nuisance as ever was imposed. The soldier then, undefiled with fallacious cleanliness, would be seen at all times in

decent serviceable order, every thing about him fitted for wear and for work.

There are other nuisances, and one of these is the use of flannel next the skin in barrack-life, and every where else but in the bivouac itself. It is an abomination even there, for the soldier can neither command supply, or change, or quality, and its use enervates the young and the healthy ; but in the field we must just conquer our disgusts, and call in its aid, for of all preservatives against camp diseases it is the best. In the barrack, under the cover of a roof, it is worse than superfluous, proving always an accumulation of impurities, sometimes of contagion, irritating to the skin, and alike repugnant to decency and cleanliness. In this I speak only of the healthy. To the valetudinarian it is the best solace ; but let it be an hospital indulgence, never an ordinary clothing. A sponge being easily packed and carried, should be held as one of the soldier's necessities, ever to be found in his pack ; and but for the extra loading, I would add to it one at least of the horse-hair rubbers recommended by Colonel Rolt.

The hair-powder and the tight breeches, and the long queue, have long been banished, but the tight stock remains, to delight the martinet when he torments the soldier. To use a common phrase, the soldier ought ever to have all his eyes about him, more especially when engaged with the enemy ; and to encircle his neck with a band of the stiffest leather, so that he cannot turn his head without pain and difficulty, appears singularly preposterous ; for, with his head so fettered and held up in the air, it is impossible that he can lay his face along the barrel so as to take correct aim with the musket. The circulation of the ascending arteries in the neck is by far the closest of any part of the human body, and to impede its relief by the returning veins, which a stiff ligature of any kind is sure to do, must have a stupefying effect upon the brain. It cannot fail, besides, to deteriorate the sight, from the pressure of congested blood upon the optic nerve, and the stock would seem to be preserved only for the purpose of generating a tendency to all kinds of apoplectic and ophthalmic diseases. It would be better, surely, to inflict an ulcer upon the soldier's neck, for the discharge might then have the relieving effect

of an issue; but a tight ligature, not only on the neck, but any where else, should be rejected for ever from military dress and equipment of whatever description.*

A heavy head-piece is every where a disqualification and hindrance to the wearer, for to heat and cumber the brain, which, being the source of all our powers and faculties, ought ever to be freest, can never be justified. A high crown is always indispensable in a soldier's cap, more especially in hot climates, to protect the head from the direct rays of a vertical sun, and that can now be furnished from basket-work, of little weight or cost, covered with glazed linen. The colour does not signify, if that be highly glazed. Ophthalmic diseases are frequent in all hot countries, and I have seen one form of them, night-blindness, or hemeralopia, so common, as to be a serious drawback upon the efficiency of a corps. Every where the direct rays of the sun striking upon the eye must be hurtful; but when these are refracted from a white rocky soil, the immediate effect becomes distressing in the greatest degree. A shade properly dropped from the cap would effectually obviate this, and it ought to be furnished. All metallic scales, and such like, as they must add to the weight, are worse than useless. The horseman's sword must protect his head; and if it cannot, an inner crown of the bark of the cork tree, which is so light, besides being a non-conductor of the solar heat, and impervious to water, would avail to blunt or turn the sabre's edge better than a circle or cross-bar of heavy steel. Indeed, I should think a cuirass of the same, covered to the fancy with painted leather, as well as every other kind of defensive armour, would be better formed from cork than from the ponderous metal now employed. The dragoon, when thrown from his horse,

* The martial bearing and erect carriage of the British soldier is not to be acquired from stiffened leather round his neck, but from tuition and voluntary muscular effort, the offspring of military pride and conscious power. When will men cease thus to play a game so teasing and pernicious, as if the end and aim of military instruction had been to cripple and disqualify, instead of conveying life and freedom to every joint and muscle of the body? A more absurd spectacle than a trussed and padded soldier, with his movement fettered, can scarcely be conceived, unless it be when the horseman is made to ride against the wind, like our present Life Guards, with a towering grenadier cap on his head of I do not know how many feet of additional elevation.

instead of being crushed by the weight of his armour, would then be saved from the consequences of the fall by its lightness and elasticity.

It seems decreed that the Hussar and the Lancer is ever to be a poppinjay—a show of foreign fooleries, so laced, and looped, and braided, that the uninitiated bystander wonders how he can either get into his uniform or come out of it. A woman's muff upon his head, with something like a red jelly bag at the top, has been substituted for the warrior's helm; and the plume, so unlike the waving horse-hair of the Roman casque, would seem better fitted for the trappings of the undertaker than the horseman's brow. The first time I ever saw a Hussar, or hulan, was at Ghent, in Flanders, then an Austrian town; and when I beheld a richly decorated pelisse, waving empty, sleeves and all, from his shoulder, I never doubted that the poor man must have been recently shot through the arm: a glance, however, upon a tightly braided sleeve underneath made it still more unaccountable; and why he should not have had an additional pair of richly ornamented breeches dangling at his waist, as well as a jacket from his shoulder, has, I confess, puzzled me from that time to the present, it being the first rule of health to keep the upper portion of the body as cool, and the lower as warm, as possible. Surely a horseman's waterproof cloak, made to cover from head to foot, the rider and his saddle, with his arms and ammunition—to be his protection against the pouring deluge—his screen and cover in the night bivouac—is the only equipment of the kind the country should be called upon either to furnish or suffer. Man-millinery, in any shape, is an abuse and prostitution of the English character. Borrow and copy from foreigners whatever may be truly valuable in arms—it is right and fitting so to do; but let us dress ourselves in serviceable garb, that fears no stain, nor needs a host of furnishers to keep it in order. I advance no pretensions to fancy or taste in military dress, but I ought to know what constitutes cover and protection to the human frame, and amongst these the swallow-tailed coat of the Infantry, pared away as it is to an absurdity, holds no place. If health and protection were the object, the coat should be made of round cut, to cover the thighs as low as the

knees, with body of sufficient depth to support the unprotected flanks and abdomen of the wearer. Of skirt ornaments, and such like, it is not my place to take account, holding the best ornament of a soldier to be firm muscle, preserved in the full vigour of circulation by adequate bodily covering.

OF THE ARMS OF THE SOLDIER.

It has long been ordained that the British Infantry soldier is to have but one weapon—the musket, with its adjunct the bayonet; but this need not have precluded his being fitted for every exercise of arms, and in the course of his military life he must have ample time on his hands, were it only for amusement, to acquire a knowledge of every exercise and weapon that the soldier can have occasion for. This seems strange, but it becomes stranger still if even his familiarity with this his only weapon is so restricted that he woos it as it were by snatches on rare occasions, and is seldom permitted the full enjoyment of it. Were it as familiar to him as the fowling-piece to the sportsman (which it ever ought to be) the young soldier then would feel every confidence in its efficacy and protection—a confidence inspired by the history of many fields, where he has been taught to regard it as the national weapon which, under all the circumstances of war, has seldom failed him. We are an economical people, famed for straining at gnats and swallowing camels, and the expense of ball cartridge is ever brought up in bar of the soldier being in the constant habit of firing it. The expense of a hundred balls—and no soldier is fit to go into the field until he has fired that number—would amount, at the present price of lead, to about one shilling and a halfpenny per man! Without this practice, he actually dreads the recoil of his own musket, which he cannot use without trepidation, and may be as likely to kill his front rank man as one of the enemy. Practice alone can make perfect in any thing, and one would suppose that the most stupid man that ever breathed could be so in-

structed, were due pains taken, as to hit some part of his mark once in twenty or thirty times; but in the armies of modern Europe it has been calculated that not one ball out of two hundred fired in action takes effect; and we may well ask, of what use is all the training which, when the hour of trial arrives, can stand the soldier in so little stead? It surely requires but little argument to make plain that unless the musket can be used with effect—*i. e.* fired accurately—it had better not be used at all; that to do this, the young soldier must begin his practice at the nearest distance he can hit the mark, and recede at given intervals until he gets beyond the point-blank range, when all farther firing is contemptible and useless, the *brutum fulmen sine ictu* unworthy of the British soldier—noise and smoke, but nothing more. It is then he should endeavour to make himself as much as possible a part of the earth's surface, until the immortal words spoken at Waterloo, “Up men and at them!” can be repronounced, when it will be seen with how little noise of firing, forces can be scattered and ammunition saved. The soldier is emphatically the man of the musket. He calls it his brown Bess; and, as his country has given her for his only mistress, she ought to remain unrivalled in his affections: with all her ways and bearings he must familiarise himself—firing over hollow grounds and surfaces of water, and down steeps or up declivities—all these, and more, he should be made to practise until, like the archer of our Edwards and Henrys, he becomes as renowned for the accuracy and rapidity of his fire, as his ancestor was for the flight of his shaft; for what would these warrior kings have said or done with men who, like our firers of blank cartridge, had been taught only to twang the bow, instead of delivering the arrow?*

And here may I speak a word

* The author, soon after his last return from the West Indies at the close of the year 1817, was induced, from the then troubled state of the country, to join the ranks of a volunteer corps in Scotland which was drilled and instructed by experienced men in all manner of ways, with the exception of the one thing needful—the firing ball, for during the whole time he remained with them, nearly two years, that was never once thought of; and this was the case generally with the whole volunteer force of Great Britain, as well as the militia, at least in the early part of the war. Future wars must and will recur, and volunteer corps will again be formed, but if they be unused to the full charged musket, however much their

for the Scotch Highlander, who has been deprived of the claymore of his forefathers, and restrained from meeting his foe face to face? With the broad-sword, he was the most heroic of all the sons of Britain; with the musket, he is but a machine. The French soldier has the brignet : give him but this, although a ship's cutlass would be better, and when the breach is to be stormed, or the night attack to be attempted, he will emulate and indeed surpass the deeds of other days, because his valour will be based upon the strength of disciplined armies, and be guided and restrained by their rules. But to return to the firelock.

Much ink has lately been shed on the bayonet question, and it may be, what it has been called, a crooked ricketty zigzag that seldom hits the mark when used offensively. This must mean if taken by itself, for when fitted to the musket, and that musket a good one, Napoleon,—no bad judge we should suppose in these matters,—pronounced it to be the most perfect combination of fire-arm and steel that ever was put into the hand of man. As a defensive weapon, it certainly is so—defensive against cavalry—when the sword of the foot soldier, if he had one, could avail little or nothing, for even the best swordsman that ever existed would be trodden to the dust in a moment by the horseman's charge, but a

first appearance might impose, they would be found, when brought into action, of as much use as so many Chinese. Let them not suppose that until they have attained this skill, which it is in the power of every man to do, they are qualified to fight the battles of their country; but once duly instructed, they will know and feel themselves to be formidable men, whom no enemy, let the tactician say what he will, can venture to approach with impunity. Volunteers, from their station in life, are supposed to have a command of money, and can assume a license which is never permitted to regular troops. Let them, then, use these to acquire the accomplishment of ball firing, erecting shooting butts for themselves when the ground may otherwise be unsuitable, and never rest satisfied, nor permit themselves to be called soldiers, until that end be attained. In their present state, supposing two such bodies to get into collision, it would indeed be matter of wonder to think how they could contrive to kill one another without the aid of the cannon and other adjuncts. If they carried broom-sticks on their shoulders, instead of muskets, they would no doubt make a sturdy fight of it; but with fire-arms which they had never been taught to use, the battle would resemble those of Italian Republics in the middle ages, when mailed knights fought the live-long day without mortal casualty.

hedge of bayonets bristling from the barrels of loaded muskets, and presented by kneeling infantry, is what he has rarely, as yet, succeeded in penetrating. Were it only for this, the bayonet surely is not to be rejected from our armies, for it serves as it were for a panoply of steel against which the force of cavalry has so often been broken. Our military nations still place full reliance upon it, and in the catechism, too, of the Russian Suwarrow, will be found a testimony of its merits worth consulting. He derides the bullet as an arrant fool, a wanderer upon the wind, while he lauds the bayonet to the skies, because it goes direct to the heart, calling upon his soldiers to fix their eyes on their enemies' breasts, for it is there they are to plant their points: and here he unconsciously draws the distinction between the semi-barbarous and the civilised soldier.* All savage tribes and nations can be led to the charge, or rather can with difficulty be withheld from it. It is their first, and, when foiled, must be their last effort, but the soldier trained in due self-command disappoints their fury by skilful manœuvre, and allows it to exhaust itself. Modern war is now missile war. It very seldom has been, and can scarcely be anything else in the combats of infantry soldiers. The missile there will always prevail over the point, and we believe that a more sublime spectacle can scarcely be exhibited than the obedient soldier, always self-possessed amidst the havoc, the confusion, and casualties of war, directing the fire of his musket with knowledge and effect. It partakes of the highest philosophy, being as unlike

* Suwarrow wrote a Catechism for his soldiers. Could not we write another in something like the following short catechetical syllogistic form?

What is the chief end of the soldier?

To destroy the enemy by firing ball.

What the use of the manual and the drill?

To give readiness and facility to handling the musket that is to fire the ball.

What the use of all the field manœuvres in which he has been trained?

To take or gain position and formation for the better firing ball.

But the British soldier is seldom permitted to fire ball; and during the war of a quarter of a century, somewhere about half a million of men—the whole militia and volunteer force of the United Kingdoms—were not only uninstructed, but virtually interdicted from firing ball. Surely this *reductio ad absurdum* need not be further pursued.

the fury of war, with all its demoniac passions, as it is possible to be, and the troops who best possess it must ever be victors.

There can be no doubt that, but for the contents of the musket's barrel, the pikeman or the practised swordsman, advancing against the bayonet, would speedily bear it down or turn it aside, provided always the infantry soldier, instead of manœuvring, would stand to be so charged, but, until his assailants can be gifted with an intuitive knowledge of the musket's contents—whether discharged or no—we may fairly presume that it will remain, as at present, a weapon of menace and execution, which men otherwise armed will ever be shy to approach. The missile now, however, must always do the work of war, and the Anglo-American rifle will as certainly achieve the conquest of the New World as the formation of the Macedonian phalanx secured the conquest of Asia to the soldiers of Alexander : how wonderful, then, that after the experience and chastisement we received from it in the course of two unhonoured wars, we should still be almost as shy of touching it as if it were a forbidden thing ! To go to war on that continent without it, or indeed in all its wooded regions with anything else, would be like bullocks being led to the slaughter. Where, then, will be the use of our embodied battalions, our close columns and heavy formations, but as food for the marksman's rifle ; and what should we have to oppose it ?* In the British army we have had but a dribblet of that arm. The French abound with it almost as much as the American. There the little voltigeur was always the most active and destructive of our enemies, and he was justly prized by his country, having rank and pay in the army with the grenadier. We, when we form a rifle corps, still hanker after size and height, forgetting that a grenadier rifleman, where concealment (ambush) is the object, and smallness of size the qualification, is an embodied absurdity. At the battle of Jacinta, which sealed the fate of the Mexican army in the Texas, a regular force of more than 1500 men, commanded by the experienced

* When the brave but inexperienced Braddock, in the war of 1765, led a gallant British force to be destroyed in an ambuscade of Indians, more hours were said to have been lost, during the march, in dressing the line and keeping the step, than would have sufficed effectually to frustrate the ambuscade.

General Santa Anna, was destroyed in less than half an hour by a band of Colonial rifleman, not amounting to half their number; but so deadly was their fire, that 630 of the enemy were killed outright and 208 wounded—the comparatively small number of the latter proving the terrible accuracy of rifle practice. The rest of the Mexican army, appalled at this fearful execution, surrendered at discretion; and all this was achieved by the Anglo-Americans, at the small expense of 2 killed and 23 wounded.* Our own New Orleans affair (bating the sequel) was not much better than this. Bunkers Hill was much akin to it, and, until we learn to fight as they fight, we must look for the same happening again whenever we expose our embattled troops to the rifleman's ambush.

Of all the fire-arms ever placed in the hands of man, the rifle is by far the most deadly and destructive. Its wondrous execution as a missile weapon should be studied by every soldier, for it will prove to him the perfection that can be attained, almost to a certainty, through attention and practice, and through these alone. When wielded by the Americans, if allowed to approach our line, the blue-draped officers would fall dead as if at the word of command. They would be gathered to the harvest of the rifle as the gatherer culls the choicest fruits of the tree. Such a force must be met and encountered to the teeth on the very threshold of the field, as far as possible in advance. The fire of our light troops, delivered with accuracy and celerity, might then, from the greater facility of loading the firelock, prove a match for it; but woe to the betrayed victims—betrayed to the execution of the rifle—and woe to the cause of their country, if they have not been taught and trained so to do†.

The blue officer, so conspicuous an object amidst a body of

* Vide Kennedy's Texas.

† Soon after the rupture of the peace of Amiens, when all the world took to volunteering, a zealous city commander of that force, whenever he divided his corps into two parts for the purpose of mimic war, caused much merriment by a new word of command, "Dead men down!" when a previously appointed number disappeared from the ranks. In the American warfare of the rifle, the command, "Officers down!" would turn out to be no joke.

scarlet men, will never do for such warfare. He may indeed shew his bravery by so making a target of his body ; but he has been placed at his post not to be shot off it unnecessarily, which never can happen without creating more or less of confusion and dismay amongst the men, but to maintain it for the guidance and preservation of those placed under his command.

OF BARRACKS AND BARRACK LIFE.

THE soldier in barracks is not so healthy as he ought to be. At the healthiest period of his life, and selected from the healthiest of the population, he should stand far above the civilian in the calculations of life assurance; but whether through the influences of aggregation, changes of diet, and new mode of living, or the reckless dissipation incident to all military bodies, he falls below it even in his native country, where all the chances of health are in his favour. In other climates he must run the risks incident to all who are subjected to that change. There must be a reason for this, which I have no difficulty in attributing to the accumulations of the barrack economy. Our barracks may be, and often are, very good; still I never saw one that was not too crowded, or in other words, where, if the men had been lodged in separate cottages, or even hovels, they would not have been healthier. Accumulation has ever been the most prolific source of disease; new contagions are generated by it, and all are prone to fall under the influence of those that have previously existed. In a crowded apartment every individual is debilitated by breathing an atmosphere vitiated by the respiration of a multitude, and made thereby less fitted to resist exposure to the open air. This is the cause of the catarrhal, pneumatic, and even typhoid fevers which so often pervade our military quarters in Britain; and were I employed to raise a building for the generation of these diseases, I would take, for my model, the wooden barracks that covered our eastern coast, more especially during last war, with their double tiers of beds, low roofs, and confined volume of air. Of the soldier's life within these barracks there is much to be said, and I should think, much to be amended. To take his guards, to clean his arms, and attend parade, seem to comprehend the sum total of his existence—amusement, instruction beyond the

drill, military labour, and extension of exercises, would appear to be unthought of; and as it is impossible that the above duties can fully occupy his time, the irksomeness of idleness, that most intolerable of all miseries, must soon overtake him, and he will be driven to the canteen, or the gin-shop, for relief. Labour in every shape seems to have been strictly interdicted to the soldier as water for his drink. All, or nearly all, must have been bred to some trade or other before they became soldiers; but they are to work at them no longer. Labour, the labour of field-works and fortifications, strengthens the limbs and hardens the constitution, but that is never thought of in our military life at home: so thought not the ancient Romans, whose military highways still exist, and who never permitted their soldiers to grow enervated in idleness during peace. Better, surely, would it be that every one should work at his own craft, or be employed on the public works, in regulated wholesome labour, than thus to spend his time in sloth and drunkenness. But his exercises, without even going beyond the barrack premises, may be made manifold—running, wrestling, gymnastic games of every kind, that harden the muscles and strengthen the limbs, should be encouraged, and when the weather forbids out-door pastimes, the healthful exercise of single-stick, in giving balance and power to the body, quickness to the eye, and vigour to the arm, may properly be taken as a substitute for the drill, which, after the soldier has been perfected in his exercise, is always felt to be a punishment. So is the unmeaning evening parade, and perpetual roll-calling. Surely, if the soldier present himself once every morning correctly equipped and in order, the most teasing martinet ought to be satisfied, and then no more should be required than to see that the men are all in their quarters on the beating of the tattoo. Surely the use of the sword has been too much frowned down, as if it had been a forbidden thing. In the night attack the musket is worse than useless, its fire leading to every kind of confusion; and at the breach it is little better, for it can only be presented against the stone walls and ramparts that conceal the defenders; but it would cover the swordsman advancing to the breach, and a couple of chests of ship's cutlasses furnished to every regiment as regimental

baggage—a single horse-load—provided the men had been taught to use them, would generally supply all that could be wanted for that exigency of service. Let any one reflect upon the fearful expenditure of life at the breaches of Badajos and St. Sebastian, and say if some means should not, if possible, be devised, to render it less costly hereafter. One is almost tempted to regret the times “when,” according to the old song, “our leaders marched with fuzees, and we with hand-grenades:” and could the good grenadier have carried a sword by his side, to use after he had tossed the ball, he would, I believe, have done much more execution than with a musket and bayonet: and why should the artillery be to him a closed book, as if in the course of his service he was never destined to handle or to suffer from it? A couple of guns, even if wooden ones, in every barrack-yard, with an old invalid bombardier to teach the use of the rammer, and the sponge, and the match, would fill up many a vacant dreary hour, and open his mind to a most useful professional lesson. The lesson, moreover, would be as useful to the infantry officers as to the private. He would then, should he ever prove the captor of a prize gun, at least know what it was, and be able to turn upon the enemy the engine that had just been used for the purpose of destroying himself. Every sailor even on board a merchant ship, where there are no idlers, must become more or less an artilleryman, and why should not the too often idle soldier? Foot racing, too (the art of running), so little practised, and so supremely useful, should be held amongst the qualities that constitute military excellence. It was so held at the Isthmian games of ancient Greece, and deserves a better place than has hitherto been assigned to it in the military pastimes of modern Britain. In our school books we are told that the youth of ancient Persia were taught to launch the javelin, to ride the war-horse, and to speak the truth. Let the young British warrior be taught to use his limbs, to fire ball-cartridge, to cook his provisions, and to *drink water*. The tuition may be less classical, but it will stand him in far better stead during every service, whether at home or abroad. But to return to our subject of barrack-life.

Barracks from time to time should be evacuated for purification.

The evils and dangers of accumulation will otherwise beset them, inducing disease ; and to obviate this it would be well, whenever practicable, to march out their inhabitants, in the summer season, to the nearest heath or common—always, however, without tents—and there make them hut themselves. No military lesson could be more useful than this. Every man so huttet would be advanced in soldiering to the full instruction of a campaign. The change, breaking the monotony of barrack-life—the novelty, would animate ; he would be taught how to live in a camp, how to cook and to forage, to use the mattock, the shovel, and the axe. Tents, when the soldier lies upon the cold ground, with a crowd of comrades enclosed within a superficially heated atmosphere, loaded with animal exhalations, can only be considered hot-beds for the generation of dysentery. On their return to barracks they will find every thing healthy and refreshed, and they will know that they have been made better soldiers.

Some have strenuously recommended barrack libraries ; and surely, when we think of the dismal monotony that hangs over the soldier in barrack-life, no one with good feelings could object to them. Still, I must confess that I never knew or heard of a reading army. The military exercises and pastimes would seem better adapted to the soldier's character ; and I acknowledge I would rather see him a cook than a student, for on that art his very existence may depend ; but if he feel disposed to read, let him have every advantage and opportunity that the rules of the service can admit. Music would seem far better adapted than even books to fire the soldier's mind, for when played in national airs, it awakens a chord which has often electrified armies ; and amongst all nations, at some period or other of their history, it has been the accompaniment and incentive of war. The highly-civilized English soldier now fights, and can fight, without it ; but if taught to feel its powers, would he not fight better with it ? To the Irish and the Scotch soldier it still speaks the language of the heart, and the Highlander, when he hears the gathering of his clan blown from the mountain pipe, becomes elevated and transported beyond himself ; he will then encounter any thing in human shape, unappalled by all the forms of death that the engines of

war can inflict. Lilliballero (music of another kind, however) did as much for King William in Ireland at the battle of the Boyne; and the Carmagnole, the Marseillois Hymn, and the Ca-ira, communicated impetus and fury to the French revolutionary armies.

It has, I believe, ever been lawful for authors to quote from themselves; and I shall therefore conclude this part of my subject by an extract from a periodical publication, which I wrote in the year 1835.

“Of all European troops, our own seem to be the most helpless and listless in their quarters. So much is done for them, that, without enjoyment or occupation, they yawn away their time, against which they appear to have no resource but the canteen or the gin-shop. The monotony of the morning and evening parades may be useful as a muster, but the daily repetition, after the soldier has been perfected in his exercises, without any variety, must wear out the patience of the most apathetic. While the soldiers of other nations employ their leisure hours in fencing, gymnastics, and other exercises of strength, ours are lounging idle, or muddled, awaiting the hour of their unvaried meal, or the drum being beat for the daily parades. Can any men so spend their lives without experiencing the *tedium vite*, even to utter disgust, and seeking the solace of drunkenness, as much to the prejudice of discipline as health? Regular bodily pleasurable exercise has been said to be worth a host of physicians for preserving military health; and occupation, without distress or fatigue, is happiness. The philosopher can make no more of it; and every idle hour is an hour of irksomeness, and every idle man is, and must be, a vicious man, and to a certain extent an unhealthy one; for the mind ill at ease preys upon the body, and either deranges its functions in a direct manner, or drives the possessor to seek resources incompatible with health. I presume not to be a military adviser beyond my office; but surely the soldier's exercises of instruction might be so extended as to take in every duty, even every casualty of military life in every branch—swimming, running, leaping, pitching the bar, the exercise of the sword, of the artillery, might all be procured for him at his barracks; and when

these were exhausted, better far that he should be employed upon the fortifications and highways, in engineer labour of every kind, or even each in his own handicraft, than forego the improvement of his limbs and faculties in listlessness and idleness. The military roads of the ancient Romans are matter of history, and it was the great military road of Marshal Wade that, after the rebellion of 1745, first made the highlands of Scotland permeable and civilizable. It is to be lamented that the example should have been forgotten, for what national works might not have been achieved! what new Gibaltars raised at assailable points through the same means, with no more labour to the soldier than would have contributed to the healthy digestion of his food and the preservation of his limbs in their native strength! It might, to be sure, have spoiled his parade clothes, if he had no working dress, but it would have contributed infinitely to the preservation and improvement of all that the clothes covered." Who could doubt that well-regulated labour would make him a stronger man, gymnastic games a more active man, and employment a happier one? On the outward-bound passage to St. Domingo in the year 1796, a transport, containing part of the 67th Regiment, was intercepted and carried into Cape François. The captured men were immediately set to work, under that burning sun, on the fortifications of the place, with plenty of water to drink, and caravances, (dried French beans) or such like, to eat, and wonderful to say, they were the only portion of the army that escaped the malignant seasoning fever. When exchanged after the lapse of a good many months, and turned into our barracks with full rations and nothing to do but take their guards and get drunk, it speedily appeared that their time was come, and they died just as fast and as surely as their comrades had done on first landing. While using such an *animal* ration as ours, I am not prepared to say that our soldiers could with safety be made to work, or be exposed in any way under the noonday sun of the tropics. The sailor, to be sure, works in the duties of the ship under all circumstances of exposure without his health being affected by it while he keeps the sea, but the preserving power is in the last, for such a diet would speedily produce fever on land.

It is the teasing without instruction that irritates and provokes. I believe it to be the best rule of all service for the commander never to ask a man to do an unnecessary thing, and never to spare himself or others, but, whatever may be the hazard or inconvenience, to insist on the performance when necessary. Let soldiers feel that they are making progress in any way with arms, and they will cheerfully submit to the discipline, but the eternal repetition of the same thing cannot do otherwise than wear out and jade the spirits. It is in the home dépôt that the young recruit ought to be taught all his early lessons; when he joins, as he ought to do, a formed soldier, the period of teasing is past, and he ought to be allowed more leisure. The dépôts should be the schools of instruction, but in the military periodical press I perceive that they have every where been cried down, for no reason, that I can imagine, but that the officers sent there are too idle to bestow the necessary attention upon the recruits. Were they what they ought to be, the young soldier, besides his exercises in arms and gymnastics, would then be taught the art of preserving himself and his equipments; to cook his dinner; to cleanse his person; to mend his clothes, or even his shoes, (for if when on service he has not been taught and furnished with the means of taking up a stitch when it falls, he will soon be naked); even to wash his linen should not be considered beneath him, for in the field he will not always find a washerwoman, and in barracks he may not always be able to pay for one. All these would certainly be better taught before the recruit joins the Regiment; the doing so would save much suffering to individuals, and eventually many men to the service.

MILITARY HOSPITALS AND STAFF.

OF THE MILITARY HOSPITALS.

UPON these will greatly depend the efficiency of every army. If they are well managed, the army in all probability will be fit for the work upon which it has been sent; but ill managed, they will sap and destroy the best appointed force that ever took the field. Under the first condition, they present the most gratifying spectacle of civilized war, and may almost be taken as an apology for the perpetration, for it is in them that true humanity can be best displayed, in holding out the healing hand alike to friend and foe, if once laid on the bed of sickness. Barbarian nations know them not; they abandon their sick and wounded to chance, without consideration or remorse; and in so doing, whatever may be said of their humanity, they sometimes act not unwisely, for disorderly hospitals will destroy an army far faster than it can be recruited. The examples of this are manifold.

In the years 1793-94, a British force was sent to Flanders. In those days we had little knowledge of hospital economy. The experience of the preceding war in America, unimportant as it was, had in a great degree been forgotten; and the physician-general at home had pronounced his fiat against employing any other but graduates of the English Universities in treating the diseases of soldiers at the military hospitals*. The consequences were such as might have been foreseen. An old broken-down court-physician of London, upon a claim of having accompanied the expedition to Cuba, some forty years antecedently, was ap-

* This same Physician-General, when at an after period he was ordered to proceed to the succour of the distressed army in Walcheren, refused to obey, putting on record his official declaration, that he had no knowledge of camp and contagious diseases.

pointed director-general. The old army medical officers were every where superseded by young medical men from the Universities, without the smallest advantage of clinical experience, or military medicine. Regimental hospitals were all but unknown, and in the general hospitals there was neither system, or code, or rule of management. As soon as circumstances pressed, every hospital consequently became a pest-house—a deadly drain upon the effective strength of the army. The evils of accumulation, that mighty fount of human disease, became aggravated from month to month, until at the last I verily believe no army ever exhibited in its hospitals a more lamentable spectacle of indiscipline and abuse.

The position of the young physicians, meanwhile, was both pitiable and ridiculous. Divested of the pride they had imbibed at the Universities, they might have made excellent hospital-assistants: and, from their high general education, would have been deserving of every promotion the rules of military service—which in due course of time they would have come to grace and elevate—could permit. Their station in society, too, proclaimed them to be a class far superior to what the army had commonly received; but as physicians, setting aside their utter ignorance of diseases at so early an age, more especially military ones, they were far too fine for common use. To one of them I was attached in the first campaign. He could read Hippocrates in the original Greek, but he did not know the grain scales and weights when he saw them; and to have touched a bleeding wound, even while the sound of the cannon was booming in our ears, would have been to lose caste. He was my superior by at least four degrees of military rank, but I had to teach him what I myself was taught in the early days of my apprenticeship. With an apothecary, an assistant, a nurse, and a clerk in his train, he might have made a routine book prescription, in classical Latin (for what young inexperienced physician ever makes any other, unless by chance) out of the military medicine chest; but had the ingredients of his own prescription been put into his hands, he would have known as much about them as if they had been sent from Timbuctoo. He had worn a cap and gown at Cambridge, but it is not to be

supposed that he had ever entered an apothecary's shop, or contaminated his hands with drugs either in bulk or detail. In fact, no medical officer should be tolerated in an army who cannot, like the man of Ross, "prescribe, attend, the physic make and give." He must be a man of all work to have any business there ; but to have placed such men over the heads of all who were experienced in military medicine and diseases, while he was not fit for any work, was as stupid and gross an abuse as could have been imposed upon an army. The assumption, the affront to every principle of service, was monstrous, and shows to what extent university and corporate pride will proceed, when unchecked by wise regulation and military rule. It far exceeded any ordinary pretension, for even the son of our king, afterwards William IV., did not disdain to enter the naval service as a midshipman, and rise in it by regular gradation. If such were the chiefs, we may guess what would be the subordinate officers, where rank and dignity were forbidden to all but members of the favoured corporations. Hospital mates and assistants were raised by bounty, without question asked ; and to such were often necessarily committed the lives and limbs of our brave soldiers.

When these disastrous campaigns had passed away,* some improvements began to be made in our hospital system. Medicines were furnished to regiments, and the medical staff of battalions was placed upon a more independent footing, as no longer depending for the best part of their subsistence on the savings they could make from the medicine money of the soldiers. Regimental hospitals too were furnished at the public expense, and became a component part of every corps. This was an improvement decidedly British, for they have never been adopted to any thing like the same extent in the armies of other nations, and has led to results more beneficial and important to the preservation of the

* They were most disastrous ; but the state of the hospitals, bad as it was, cannot justly be blamed for all the calamity, for in the course of our retreat through Holland into Germany, we fell in every way—by disease, by famine, by the rigour of the season, and by the sword ; and out of a gallant host of fully 30,000 men, when the retreat first began from Flanders, scarcely 8000 remained to witness its completion.

troops, than any other means that could be devised. After they had been established for a course of years, I was called to the head of the Medical Department of the auxiliary Portuguese army in the Peninsula ; and being anxious to establish them there also, I addressed the following to the General Officer commanding that branch of our forces. The quotation, although written nearly thirty years ago, is so apposite and decisive of the question, between the eligibility of regimental and general hospitals, that I am convinced I could not, even now, were I to try, write any thing more to the purpose ; and therefore it is given entire.

“ The regimental hospital is the cardinal hinge on which the health of armies depends, the first resource of the sick soldier, and best security for maintaining the effective strength of the forces.

“ In actual war, and during the rapid movement of troops, the sick must be left behind, and then general hospitals are necessary ; but these ought not to be considered as a permanent, but only a temporary expedient, to meet the pressure of service, and in no respect essential under ordinary circumstances to the proper care of the sick.

“ The plan of the general hospital should be precisely that of the regimental, on a more extended scale. It is impossible that these can be well conducted, unless by medical officers of good education, who have acquired experience of military practice, with a knowledge of the soldier, his diseases, temper, and habits, in regimental hospitals, and have become familiarized with military duty, from having served in the different gradations of medical rank.

“ Even under the circumstances just mentioned, these hospitals will always prove a great, though a necessary evil, destructive of the effective strength of armies ; for diseases are difficultly cured wherever a large body of sick is aggregated together, new contagions are certainly generated, and discipline is imperfectly preserved, because the dread of immediate military punishment is removed. The soldier, too, often becomes infected with vicious and malingering habits, when no longer in the presence of his officers, and under the eye of his corps ; for the villains and ma-

lingerers of the army are always found to skulk in general hospitals, and there to spread the contagion of bad example. In all armies, therefore, the sick should never, under any circumstances, except those of actual service before the enemy, be sent to general hospitals, while their regiments are present on the spot. To do otherwise must wound the professional feelings, and operate as a proclamation of idleness and freedom from responsibility to the medical staff of the corps, deprive the sick soldier of his home, and prove further hurtful by the loss of time or change of treatment which the transferring him to the hands of strangers necessarily implies.

“A soldier sent to a general hospital is rarely restored to his corps during the campaign. The average duration of sickness in regimental hospitals is always less, and mortality smaller, not from superior medical treatment in the last, but from the unavoidable loss of time, and interruption of the means of cure, in transferring him to the first at the beginning of his distemper (always the most important period), the pains and danger of a journey under such circumstances, the despondency induced by the presence of many sick, the spectacles of death around him, and the less tender attendance which he is apprehensive of meeting, and too often does actually meet, at the hands of hospital servants, who are unknown to, and therefore feel little interest in him.

“Instead of collecting the sick of an army into one spot, it ought to be a rule to separate them as much as the service will permit. This prevents the generation of fresh contagion from by far its most common source—undue accumulation of human effluvia, more particularly from bodies under a state of disease, and accelerates recovery, by insuring, in a superior degree, the advantages of ventilation, discipline, repose, and attendance.

“It is of still greater consequence promptly to separate the convalescent from the diseased.

“To conclude, were a plan of regimental treatment generally adopted, it would, by cutting off the source, afford a radical remedy to the abuses and peculations which have so long pre-

vailed in the fixed hospitals of this country,* improve the professional character of the medical staff, and strengthen the connection between the officer and the soldier, who would then be taught to look up to, and depend upon, his official protector in all situations."

Notwithstanding all the above, it is essential that general hospitals should exist, and that too upon a scale commensurate with the greatness and humanity of this Christian country. Whenever, under the circumstances and movements of war, it may become necessary to disembarass an army of its sick, or whenever such serious cases of wounds and disease occur, that they cannot be treated properly with their regiments, they must be left behind and duly cared for.

I have described their evils—it is but fair to acknowledge their uses; and when well administered, they offer succours to the graver victims of war, which no civilized Christian nation can be justified in withholding. It is in them that the accomplished medical officer can best display, in the cause of humanity, the qualities of his profession, and it is there that the chaplains of the army will best exercise their holy vocation; and when that vocation is well performed by sedate men of acknowledged religious character, its consolations must be as invaluable to the sick, as reformatory of the characters of those who have just escaped from the dangers of disease.

It will be seen from the foregoing that the object to be sought amongst all congregated masses of men is the avoidance of accumulation. Separate the sick, and the contagions dependent upon accumulation consequently vanish. In the crowded hospital they were multiplied to an indefinite amount, and the whole atmosphere surrounding the sick became so impregnated with the poison through the individual portions furnished by each, that no one could breathe it without the greatest risk of being struck down by the contagion.

The French have made an attempt to imitate our regimental

* These hospitals, instead of supporting the effective strength of the Portuguese army, had long been its most dangerous and destructive nuisance.

hospitals in their ambulances, but, except when the troops are actually in the field, they must be greatly inferior, because implying the necessity of removing the sick soldier from his regiment—a measure never to be resorted to unless under the pressing exigencies of war. But, bating this great mistake, their ambulance or field hospital system I believe to be greatly superior to ours, and that it contains much that we might copy with great advantage, always, however, returning when practicable to our own regimental hospitals. Our means of transporting sick and wounded have ever been deficient and cruel, as all can testify who attended the bullock cars of the Peninsula. We have indeed a few spring waggons, but not a tithe of what an army engaged on actual service would require; and as to an hospital corps, duly organized for the service of the hospitals in all its branches, we have yet to learn what it means. That of the French, which attended the grand armies in the last war, amounted to thousands in number, mounted and dismounted, with officers in graduated rank, and possessed every species of equipment, including horses, farriery, &c. which that branch of the service could require. A better organization, whether as it regards humanity, or the efficiency of our army, it is to be hoped will be made in future wars.

In the army of St. Domingo something of the kind was attempted, and an hospital corps was formed under the direction of Colonel Gilbert Waugh, an excellent experienced veteran of the American war; but with all his knowledge the attempt was a miserable failure, as every attempt must prove which is not conducted upon original sound principles, instead of being left dependent for success upon the pleasure of commanding officers of battalions, who cannot be supposed to care for the success of another branch of service with which they have nothing directly to do. The regiments of the expedition were called upon to furnish proper men, and it would indeed have been wonderful if they had sent their best. They acted as all regiments will act in similar circumstances, when left to do as they like. Had they a man amongst them whom they were tired of flogging, and who could neither be induced to die or to desert, he was the elect for the hospital corps, or at best he might be a simpleton, not fit to

stand sentry in a position of trust, or so awkward in the ranks that he could not be trusted with a ball-cartridge. In short, such a collection of incorrigible and incapable villains I believe never was brought together; and it was a true relief to the army when their drunkenness and the yellow fever killed them off. Such will never do for an hospital corps. They should either be raised as an independent body, or be formed from the emeriti of the army, out of the old soldiers who had served their time, and then to be promoted into it as a reward and indulgence, with some trifling distinction of superior pay. This, surely, is not impracticable, even in our impracticable army, when any thing new is proposed.

Formed as our army is, that such men will ever be prone to drunkenness is certain; and even were they not, it cannot be supposed that any class of males will make the best nurses for patients confined to bed in a sick ward. Whenever it is practicable, the women of the army should be employed in that office, strictly confining their duties, however, to the sick wards only. It is a perversion, in some degree, of a man's nature, to make him a sick nurse; and the worst woman will generally make a better one, as being more handy and compassionate than an awkward clumsy man. The expense of a nurse's wages has ever been brought forward in bar of employing her. She requires, it seems, a shilling a day, while the hospital orderly must be content with fourpence: thus, ever penny wise and pound foolish, we seem to forget that the orderly, in addition to his fourpence, must have his full pay of a shilling, while he is withdrawn from his place in the ranks to perform duties that would be better executed by a more fitting official. Under the exigencies of war, women may not always be found for the service of the hospitals; but whenever they are, they ought to be employed: the attendance upon the sick and wounded being the understood condition of their being allowed to accompany the army. In the colonies, the coloured women of every class, whether blacks, mulattoes, or mustees, make the best sick nurses in the world. Nothing can exceed their vigilance and tenderness. They also delight in the

office far beyond European women of any class, and it is to be regretted they should not always succeed in obtaining the place they are so well calculated to fill.*

OF THE HOSPITAL STAFF.

Notwithstanding the experience of the longest war ever waged by Great Britain, or, I might almost say, by any other country in recent times, the medical staff of the army still presents imperfections and anomalies, the obvious absurdity of which, one would have supposed, must have ensured their correction long before the warfare of a quarter of a century could have passed away. The medical staff of regiments is, on the whole, very good; its officers have a defined position in the army; they are

* That they have an aptitude for the office, and seek it on all occasions, the following little characteristic incident that occurred to myself will aptly shew. After a terrible attack of yellow fever at Port au Prince, St. Domingo, it was seen I could not recover there, and I was conveyed, in a deplorable state of weakness, to Cape St. Nicholas Mole. I had no sooner taken possession of the sick quarter assigned to me, than two respectable-looking females of that class, of matronly age, came to pay me a visit. They told me, for my comfort, that nine officers had died in the very corner of the room where I was then lying—that the English doctors had killed them all, that they killed every one, and certainly would me, if I took their physic, which I was never to do, but when any was left for me, to send for them; that they knew many herbs, and could prepare from them drinks (ptisans) of sovereign virtue. This to me, myself a mediciner, was very amusing, and when my servant, in the course of the afternoon, brought in some new-baked bread, I, with his help, prepared a set of bread pills, and then sent to my new friends to say that the English doctors had been with me and left their medicines. They came immediately. The pills were produced, which they crumbled down between their fingers, smelled them well, and bit, but very cautiously, with their teeth, and then declaring that they were the identical poison that had destroyed so many people, threw them with great indignation out of the window. They soon discovered who I was, but so far from resenting the trick I had played upon them, they were unwearied in kindness, and I was much beholden to their Creole kitchen for many comforts during a long and difficult convalescence. Our own coloured women have much of the same tenderness and kindness, but the French are superior to those of any other nation, from the greater respect and consideration with which they are treated.

under the protection of a corps, enjoying the benefit of its mess in the best society, and being now necessarily well qualified men, are in general respectable and respected. The General Medical Staff ought to be even more so. But is this the case? On first joining an army, they may be said to have no head quarters, nor indeed position of any kind. From there being no ambulance with the British army at which the young medical officer might find a home, nor hospital corps to furnish him with means of conveyance and service, he often wanders about, acknowledged by none, because not wanted by any, until the time of actual service arrives, and then he is in requisition far beyond what either his own exertions can supply, or the constitution of the medical staff can afford. In the first position he is voted a supernumerary, encroaching upon the accommodation of the army. In the latter, he has a load of pressing duty thrown upon him, which it is not possible he can perform satisfactorily. His duties, moreover, are either ill defined or absurdly regulated.

Taking the medical staff of regiments, where all act as army physicians, prescribing for diseases whether medical or surgical, and performing operations as the first circle of duties, it might be supposed that all would continue to walk in the same line through the different grades of military service. But no. Promote the operator amongst the regimental surgeons to the rank of physician, and the knife is forthwith taken out of his hands; he is never to touch it again. Make him a staff-surgeon, with superior rank, but the same pay, he may indeed preserve the amputation-knife, but he is deprived of his home with the regiment, the accommodations of his mess and his servant, and made to shift for himself as he best can. Still more,—promote him to the highest ranks of Deputy-Inspector, or Inspector-General of Hospitals, and he ceases to be a medical man altogether, whether physician or surgeon. He is from henceforth to be a man of office entirely, an officer of administration alone: the book of physic, including surgery, is shut in his face, never to be opened unless by the less experienced juniors. Many, it must be owned, have continued to read and to inquire, but they have done so not in accordance with, but in defiance of, their prescribed duties.

Now, is there not much absurdity in this? For surely the army physician, whether of surgery or medicine, should continue to be so as long as he remains in the service. Who so fit to regulate the practice of its hospitals as he whose life has been spent in conducting it?—and to pronounce him unfit for the very reasons that should have made him the fittest, is to throw away the best instruments that could have been employed. The first anomaly is an offshoot of that University or College pride, which goes to declare the physician degraded by the practice of surgery. In civil life, where the division of labour furnishes operatives for every branch, it may be tolerated, but in an army, where there should be no idlers, and all be made to work at the labour of the day, the distinction must ever prove equally absurd and mischievous.

The situation of the lower ranks of the medical staff, generally young men from the schools, thrown into a strange army; where they have neither place, nor home, nor experience, nor knowledge how to guide themselves, without even being allowed a servant that could speak their language, as in the Peninsula, but left at the mercy of any native camp-follower—the veriest rips in existence—was as pitiable as can well be conceived. I have seen them robbed and stripped to the skin by such depredators, without knowing a word of the language to help themselves, or having a resource of any kind to apply to; while, if they dared to retaliate in self-defence, martial law was ever ready to crush the victim it had failed to protect.* This was not kind; it was not just; for allegiance and protection should ever be made to go hand in hand. The supplying every officer of the civil departments with a soldier

* I saw a young Scotch hospital mate placed in this predicament on his arrival at Lisbon, during the Peninsular war. Having no assistance or resource, he hired the first Lisbonian that offered himself for a servant. The weather was hot, and either for the sake of coolness, or in accordance with the proverbial economy of his country, he went to bed without a shirt, leaving it with the rest of his clothes and baggage at the bedside of his billet. In the morning, servant, shirt, baggage, all were gone, and he was left without a rag in the world. His loud vociferations at length brought some of his companions about him, who found him naked as the statue of Memnon, bawling for revenge, and intent upon pursuing the fugitive robber into the streets of Lisbon.

servant, or tentman, would no doubt have withdrawn a hundred or more men from the ranks, but they need not, and they would not, have been the best musketeers. The regiments would never have consented to part with such; and to refuse them a tentman of any kind, was to pass upon them something like a sentence of excommunication. It never was done towards them in any army before that I know of, and it is to be hoped never will be done again. But the position of the superior medical staff has seldom been what it ought to be. It is not pretended that they should be consulted on the military operations of the field, for the fate of a campaign must ever outweigh the present health of the troops: nevertheless, their opinion ought to be heard in all matters of encampment, quarters, and subsistence. This has hitherto been little the case in the British army. When I held the office of Inspector-General of the Portuguese auxiliary force on the Peninsula, the conscription of 1810-11 was literally destroyed, from being crammed into the fortress of Peniche, one of the unhealthiest quarters that could by any chance have been selected. When pestilence had more than half done its work, I was consulted for the first time, and sent to succour, if succour could then be of any avail to men so situated. In the following year I learned, still without being consulted, that St. Ubes, a situation fully as unhealthy as Peniche in the autumnal season, had been chosen for the next conscription; and I have reason to believe, that by voluntarily protesting against it, I averted a similar catastrophe, and caused the conscription to be moved to Mafra, one of the healthiest quarters of Portugal.

In the West Indies I found medical opinion equally at discount. The convenience of the Engineer, the whim of the Quarter-master General, or General commanding, and the profit of the contractor, seemed alone ever to be consulted. There was not a station in the command where the health of the troops seemed ever to have been thought of, or a health opinion called for. It might be given, but it was always treated as an unauthorised assumption. Thus, on making my inspection of the island of Trinidad, I found that the station of St. James's, at the foot of Fort George hill, had been fixed upon for building the principal barracks of the

colony. I considered it my duty to point out its insalubrity, and to give my reasons why it never could be made healthy, but must always prove the grave of white troops. One would have supposed from the event, that instead of protesting against, I had actually recommended it, for the building of the barracks was commenced forthwith, at an enormous expense, and to the certain destruction of all white troops that have ever been made to inhabit it. Hitherto this has been the case every where. Let us hope, henceforward, that in peace at least no station will ever be chosen for barracks, upon which the health authorities have not previously been fully and duly consulted. It is their duty and their place to give opinion upon it. If incompetent, let them be superseded by abler men, but let it never be said hereafter, that Great Britain has persisted in sacrificing her best defenders in compliment to contractors, and engineers, and builders, without reference to the qualified health authorities, that could have taught them better.

OF DIET AND RATIONS.

THE British soldier is unquestionably the best fed of all the European nations ; his ration is the most expensive and abundant, and it is served with greater punctuality and regular observance than any other army exhibits. It ought to be a ration of great enjoyment and abundance ; but still we appear to have less for the cost than could be believed, and the soldier seems scarcely to value it as he ought. This arises from its being too good and too regular, without labour or choice on his own part. Were he allowed to cater for his own mess (always, however, under due superintendence), there can be little doubt of his better relishing his meal, besides learning that most useful of all lessons, the art of subsisting himself. A great physiological principle seems always to have been overlooked, and that is, the natural appetite for change and variety. It is ever the same, and no man, even if he will, can be satisfied with this. His stomach and digestive organs will be heard in their own cause ; and if they be not attended to, their owner will fly to *alcohol* in solace of the disappointment. There is a mistake here ; for if we wish to wean the soldier from drunkenness, we should be careful to place within his reach more wholesome indulgences, of which, a diet suited to his taste (and it cannot be so suited without variety), must ever be the first. Man is a cooking animal ; but we are bad cooks principally through the want of opportunity and practice to become better. In the case of the soldier, to cook is to live ; for if he cannot prepare his food, he will be poorly fed, even with flocks and herds at his command. We need not fear the Sybarite—he does not frequent the bivouac ; and all the luxuries that the pay of the common soldier can provide will never enervate him. Better, then, by far, that he should worship the belly, than worship the wine-press or the *rum cask*. Teach him to cultivate

food instead of poison—strength instead of weakness—morals instead of depravity; and by means of all these we shall have a stronger and a healthier man to fight the battles of his country, and uphold its name through every quarter of the earth. In all this the soldier ought to have been trained and supported by the wisdom of his country. But has it been so? Alcohol, in every sense, has ever been the *Nepenthe*—the *summum bonum*—of the army. Does the soldier perform an act of meritorious service? his reward is a ration of spirits. Is he sent upon service, and subjected to the inconveniences of a sea voyage? he has, or used to have, double allowance, which was called full man-of-war's ration. Place him under a burning sun, in a crowded barrack, where heat and thirst implore for the solace of water,—let him have rum, for the water of the fountain and the brook could never have been meant to be drank by British soldiers. Other nations may condescend to the weakness, we eschew the degradation, and will ever uphold the privilege of poisoning ourselves.

Such is the creed, although it may not be so expressed, of the British army and navy; but, strange to say, our rulers have ever inculcated the error, and confirmed it with all the force of institution. To drink water, even although thirst calls, is never to be allowed without losing caste. The great Creator has given it for our solace, to digest our food and assuage our most pressing call; but do not taste it without an alcoholic addition; it will degrade your manhood, and class you amongst the lower animals, who know no better. This really seems to be the impression amongst Britons every where. How differently thought and reasoned the ancient Romans, whose drink in the field, during all their campaigns, was vinegar and water! and we must not laugh at the recollection, for on that very drink their warriors conquered the world. Of their mutinies and military disorderliness on various occasions we have all read, but of their drunkenness never! This vice would seem to have been set apart for Christian soldiers, for Mahometan nations utterly eschew it; and to their conduct in this respect may in some degree be attributed their superiority, in the early periods of their history, over the nations of Europe. Happily for the Christian world, along with alcohol

they also at one time rejected all arts and sciences—improvement was the word forbidden ; and where is now the once all-conquering and still heroic Turk ? He lies crouched in a corner of the East, awaiting the doom that must ever attend ignorance and barbarism, in the presence of knowledge and civilization. But to return to alcohol.

When last about to leave the West Indies, in the year 1817, I addressed a report to the Commander of the Forces, on the rum ration of the troops, of which the following is an extract :—“It seems to be an article of our national creed, that ardent spirits communicate strength and vigour to the human frame, even in the torrid zone ; and I regret to say, that this unworthy prejudice is not confined altogether to the vulgar. When the exhausted soldier is to be exposed during the night to a chilling malarious atmosphere in this climate, or when in other latitudes he is benumbed with cold, spirits prove a sovereign cordial and support ; but to administer them to him under a burning sun, as an article of food, or to allow him access to them as preparatory to duties of exertion and fatigue, or even with the view of supporting him under them, is about as judicious as it would be to give him a blow on the head. The one would not more certainly disqualify him for every purpose of service than the other. To the coward, ardent spirits will, for the moment, impart the courage and energy of frenzy, to be followed immediately afterwards by the extremest exhaustion ; and some of the nations of Europe prime their troops for the charge with a dose of this stimulant ; but I am convinced that even our drunken soldiers, depraved and abandoned as they are, would spurn the aid of such an incentive on such an occasion.”

I wrote so strongly because I had often been a witness of the pernicious effects of issuing spirits on a march ; and one instance, which occurred in the year 1796, had made an impression upon me which could never be forgotten. When the 67th Regiment (of which I was surgeon), then newly arrived, and in garrison at Cape St. Nicholas Mole, St. Domingo, was ordered upon an expedition up the country, the troops, previously to marching off, were supplied with a full ration of spirits. It was, as might have

been foreseen, speedily consumed, and the men marching under a burning sun, through a dry rocky country that furnished no water, fell down at almost every step. Nineteen actually died upon the road, and those who arrived at the end of the march—a distance of about twelve miles—were in a state of exhaustion and distress that cannot be described. No one, even amongst the officers, who ventured so much as to taste their undiluted spirits, escaped with impunity; and on all future marches, of which many occurred, rum might truly have been called the disqualifier. If so much as tasted while marching, there was an end of the soldier for that day. Water alone, in the way of drink, is compatible with strong bodily exertion in every climate, and under all circumstances.

It must be plain that, during bodily exercise, when animal heat is rapidly generated, and as rapidly expended, the additional stimulus of alcohol, in any shape, can have no effect but to hasten the period when the expenditure, outrunning the generation, must speedily leave the subject in a state of utter exhaustion—in fact, he will be what is called blown, long before his time; and the secret is at once disclosed why the water-drinking Arab, with a few dates, or a little parched corn for subsistence, will, on every trial of endurance, immeasurably outstrip the full-fed European. Exercise, through the increasing demands of the accelerated respiration upon the vital principle of the atmosphere, rapidly oxygenates the system. We feel this in the glow of heat diffused throughout every member and limb, when alcohol, to say the least of it, must be a work of supererogation, and food taken at the time will often remain untouched, because the organs of digestion refuse their co-operation, and what has been called the consent of parts, or rather of functions, cannot be obtained. We would laugh at the sportsman who would take into the field a gorged pointer; and yet we believe that the coalheaver, and the mower of our meadows, while performing their work, must be crammed with bacon, and drugged with heavy ale. Let both be fed, fully fed, by all means, up to the point of British courage and strength, but let them wait for the period of repose, when digestion can be performed undisturbed by a grander excitement in the system, and

content themselves while at labour with bread and water, or water alone, for the first is all that is necessary to recruit the waste, if, indeed, it could not be better supplied by the latter alone, as the bread will act principally as a sponge of retention, to prevent the fluid being rapidly carried off by the skin or the kidneys.

The foregoing relates to marching, and the active duties of service. In barrack-life, when the men are doing nothing, a ration of spirits, as an article of daily diet, ever engenders a craving for more, so imperious and irresistible, there is no crime the soldier would not commit, no abomination he would not practise, for its gratification. Punishment, when put in competition, has then no terrors, and the fear of death is set at nought. He would drink, although the king of terrors stared him in the face; and rather than go without it, he would take that drink out of a jakes, or from the most disgusting vehicles human imagination can conceive. The story told in a jest-book, of the sailor, who, on a homeward voyage, broached the admiral—that is to say, drank the spirits in which a dead body was immersed—has actually been verified in our military hospitals, where anatomical preparations have been robbed of their spirits, and the coarsest surgical medicaments and nauseous drugs, if prepared with alcohol, have been stolen to produce intoxication. But the subject of spirit-drinking in the army has been so much misunderstood, and is of so much importance in itself, that I feel it incumbent upon me still farther to enlarge upon it.

Were it proposed to inoculate all the British troops serving in hot climates, and indeed every where else, with an incurable disease, that would certainly in no long time lead to their general destruction, what should we say to the proposal? Yet, by making the rum-ration an article of daily diet, we have done worse than this, and taken the most effectual means of destroying both the mind and the body—the moral sense and physical powers of the individual—the general discipline of the army, and the national character of the country,—all, in fact, that I have been describing for many years and in many reports; and this, not because a quarter of a pint, nor any other quantity, no matter how small, or I may almost say how great, unless habitually used, could of

itself effect such evil, but because a habit is thereby generated—an imperious want created—an irresistible desire for increase of the stimulus established, which, such is the nature of the human constitution, and the operation of the agent upon it, few or none have been found able to resist; and the first experiment of this training to destruction is generally made upon the young soldier when crossing the Atlantic, previous to his being landed in the regions of heat, and thirst, and rum. Can we, then, wonder at the work of our own doing? and are we justified in inflicting the punishments to which that work has given rise? The learned and pious Bishop Heber, in beautiful language, denounced the practice as most destructive to the young soldiers of the East India army, and evidently believed it was peculiar to that service. If he had inquired, he would have found that all these new comers—aye, and their wives and children too; if they had them—had, in every foreign service, been entered and booked for drunkards and the grave, thanks to the Transport Board of those days! long before they set foot in India. In what would appear the very wantonness of national extravagance, that Board decreed that every soldier, from the moment he embarked for service, should have a daily allowance of half a pint of rum, with full man-of-war rations, and the women one-half, and the children, including even the new-born babe, one-fourth of the quantities! The intention I freely acknowledge to have been generous and kind, according to the ideas of the time; but hell has been said to be paved with good intentions,—and, verily, they did their utmost, and most wofully did they succeed, through this very regulation (which I believe, however, is now changed), in paving the military quarters of the East and West Indies with the bones of the dead; for the newly arrived soldier, wound up even at the beginning of the voyage to the point of increase, and tormented throughout its course with the ungratified desire, and the arrears of pay in his pocket, could have only one wish when he saw the land, and that was, to get drunk; for to one so primed and excited, the dangerous seasoning fever being suspended immediately over his head, and the grave being open to receive him, could have no terrors. During the last war, regiments so landed not

unfrequently lost one-half of their numbers within two months after their arrival in the West Indies ; and three-fourths, or even nine-tenths, before they had been there a twelvemonth. In fact, our soldiers and sailors, during last war, appeared to live for the purpose of getting drunk : with them it seemed to be the first article of their creed, the chief end of life ; and how could it be otherwise, if the sailor was regularly served with half a pint of spirits, and the soldier, when on service, had an allowance of the same administered to him with his daily food ? This, too, without any regard being had to the circumstances of exposure, exercise, or climate. It was the same to the soldier, whether exhausted by marching in the face of the enemy, or loitering in barracks with nothing to do ; or to the sailor, whether basking in the summer sun, or benumbed in the cold draught of the hurricane. In fact, it was made the ruling power—the absorbing passion and appetite, in which all others for the time were swallowed up. The consequences were most deplorable—sometimes I may almost say ludicrous ; for, take the sailor ready primed and charged in the way I have stated, with this furious desire for spirits when landed from his ship, and what a spectacle of riot and debauchery did he not exhibit ! or look at the soldier loosened from the control of discipline, and where did he run to ? True to their training in both cases, they had only one object, and that was, to become intoxicated. At the storming of towns (take Badajos, for instance), when rapine, rape, and murder, became the dread prerogative of the victors, these were not the ruling passions of the British soldier ; neither did he, according to the law of the breach, mercilessly bayonet the vanquished enemy ; but he seized upon him as a guide to the spirit-store, or the wine-vault, and then, as soon as he got drunk, he committed all the three, with the additional aggravation of every freak which the wildest drunken frenzy could inspire ;—and for the sake of this horrid revel, in the instance I have quoted, did they pour out their blood like water, and left such a hecatomb of dead bodies in front of the breaches, that the surrounding earth could not be made to cover them in, and the wolf and the vulture, during several successive weeks, came from the hills to scent their horrid feast.

Is any one yet sceptical? Let him turn his view for a moment to the other side of the Atlantic, and there behold a whole race of men, the aborigines of that continent, verging fast to annihilation under the blighting influence of alcohol. Their destruction has literally been achieved by rum. War upon them for the possession of the country would now be a work of supererogation, and the American States may soon and for ever sheath the sword, for within another century or less the existence of the Red Indian will have become matter of history, and his appearance as rare as that of any of the wild animals that have retired from the face of the earth before the advances of civilized man.

Here a curious fact presents itself in the natural history of our species, when we turn to another branch of the human race, and view the Negro as contrasted with the Indian. The former possesses the strongest sexual feelings, and, of all mankind, he is the least addicted to habits of drunkenness; but the Indian warrior is stern, cold, and repulsive; and whether we view him in the wilds of Northern Canada, or in British Guiana near to the equator, he is the same—indifferent or cruel to his family, whom he regards only as slaves, seeking intoxication as the supreme good, and, when once he has quaffed the poison, becoming a slave to it for life; for as surely as water quenches fire, so will every affection of our nature, and endearment of existence, be extinguished in habitual intoxication.

The exceeding vulgarity of the prejudice that ardent spirits impart strength and vigour to the human frame, is disgraceful to educated man; yet true it is, that many of our best experienced commanders of the army and navy still attempt to justify and continue the practice.* A greater crime in its consequences cannot be committed, for it leads to the perpetration of every other.

* It occurred to me, not very long ago, to witness a military festival given on the occasion of an excellent and highly renowned regiment returning from foreign service, when every individual was made to drink his Majesty's health in a flowing bumper of undiluted rum. The directors of the feast I believe to have been as good men and good soldiers as could any where be found; but to have made the rum into punch for the men would evidently, in their minds, have been a derogation of the military creed—have diminished the zest, and spoiled the toast.

They say, and believe, that it will make them stronger for the day of trial, while, on the contrary, it has made them weaker; for spirits so causelessly taken never have had, nor ever will have, any effect in this world but to enervate the frame and shorten life: enervation, not strength and vigour, is the fruit.

The melancholy infatuation has infected the governors of the kingdom as much as the lowest of the mob. Let a transport put to sea with troops, and instantly every man, woman, and child (even the new-born babe is not forgotten), has the rum ration. We rescue a cargo of prize negroes on the middle passage, and embody them with our black forces in the colonies, when, to make men of them, as used to be said, they must have the same. We incorporate foreign troops with our armies—Portuguese, Spaniards, or Sicilian—and our first boon is to make them, if possible, as drunken as ourselves. Verily we have been the true apostles of drunkenness throughout the world, and have erected its institutions wherever we had the power; for of all institutions, that which imposes the daily habit (without option or retreat), through the most unerring of all rules—the necessity of taking the daily meal—must be the firmest and best established.

One obvious remedy for this deplorable state of things would be through the allurements of variety and cookery, setting the soldier, like those of other nations, to eat instead of to drink; but he will never do this until we permit him to have a voice in the procuring and preparing the meal. The best commissariat ration will not suffice, for *perdrix même n'est pas toujours bonne*; and so true is the saying, and so essential is variety to health, that were the most attractive mess that ever was invented served up daily, under precisely the same form, without change or addition, it would not only, in the course of time, cease to nourish, but the person using it would acquire the same scorbutic tendencies as a sailor after a long voyage; for it was not the salt or salted meat alone that used to give scurvy to the sailor in former times, but it was its dryness, and the sameness of his unvaried diet of hard ship provisions: for almost any, and every change, would both stop and cure the disease. Hence the appetite for variety, however much it may be abused by the voluptuary for the

sake of sensual gratification, is in itself an instinct of nature prompting the change which the health requires ; and to obey the call is wise in every sense, for the soldier's knowledge of the art of subsisting himself, so often necessary to his very existence in the field, will thereby be extended beyond the routine of barrack messing ; he will have overcome many prejudices, and acquired new resources of health and efficiency. Every new country spreads out her stores of this kind. The land produces and the sea teems with them ; but for as long as the public stores are open to him, I have seldom known the soldier so much as venture to taste beyond his ration allowance ; he will drink—he has no prejudices there—but nothing will induce him to eat ; although his subsistence money, as its name implies, was given him for the express purpose of the last, and he ought to be compelled to use it for his due support, instead of his destruction. Wherever, then, there are markets of abundance, it would be greatly for his advantage that the ration, with its consequent stoppage, should cease, and the full subsistence money be expended under the direction of the non-commissioned officers for the messing of companies. In this way would he be obliged to think and provide for himself ; and he would be far better fed, to the great saving of the public stores, with the produce of the climate wherever he might be, than by the dried unvaried articles of his ration allowance. The variety of an occasional fish meal is at all times most salutary ; but I have never known it to be sanctioned in the army ; and I have seen the soldier quartered where fish might be had for the catching, almost for the asking, yet he had never tasted, and scarcely knew the names of the fish that were caught before his eyes.

When the messes are small, the cooking for comrades is eminently a social act, in which all the members are sure to take an interest, and every one, in some shape or other, can lend a hand. It is, besides, the most useful lesson a soldier can acquire. At our National Schools, from which in future the recruits for the army will be drawn, we have classes for reading, writing, arithmetic, &c., but where is the cooking class ? in other words, teaching how to economise the *vivres* of the country ; to live well

upon small means; to prepare plain food in the best form, by giving it bulk and flavour; and, when coarse, to make it palatable and nutritious; to put every thing to its proper use; to waste nothing, and save every thing. This, truly, would be useful knowledge; and it may be shown even in the boiling of a potato, making all the difference to the hungry man who is to eat it, whether he is to be presented with a watery indigestible mess, or a pleasing wholesome farinaceous vegetable. Still better may it be shown in the preparation of coffee, of which our people, and consequently our soldiers, literally know nothing; but could it be made, as on the continent, an article of daily diet, it would go farther, through its cheering tonic qualities, to supersede the coarse alcoholic drinks, than all the sermons that ever will be preached on the subject, or the most stringent resolutions of all the temperance societies. These drinks have for ages been dreadfully abused; but to say that, when “cold and privation,” those sure harbingers of typhus fever, weigh down the dejected soldier, they are of no use, would betray the bigotry and prejudices of totalism. Who that has seen him over his bivouac fire, and still worse without a fire, “pale but intrepid, sad but unsubdued,” could be so foolish or so unfeeling as to counsel the depriving him of his spirit allowance? During night guards, and night marches, *after they are over*, and outlying piquets, it furnishes an excellent defence against malarious chills, and all the ills of cold and moisture, provided it be never administered until the body be at rest.

I do not deny that strong hot coffee (with cigars) would be better; but how could the soldier procure it in those situations? for it is the *multum in parvo* qualification, and the portable convenient form, that makes the spirit so eligible; but it is applicable only to that most noxious and depressing form of cold that results from wet and moisture, for in dry hyperborean cold it is always dangerous, and may prove fatal, because then the brain is already oppressed by the blood being driven in upon it from the chilled surface—witness the apoplectic sleep and stupor of sufferers overwhelmed by the snow—and the exhibition of any intoxicating

liquor would too probably prove the death-blow : actual heat, in any liquid form, is then the true remedy.

This actual heat (caloric cognizable by our senses) seems seldom to have been appreciated as it ought, having too often been superseded by the potential or secondary heat derived from the stimuli conveyed in alcohol or other articles of diet. Its efficacy exceeds that of the last mentioned in an incalculable degree, and ought, the more especially, to be understood by the soldier. In the morning, above all, he will often be, as it were, lost without it ; for though the warm liquid breakfast may contribute little towards bodily condition (the fattening process), it is a more indispensable meal even than the dinner preparatory to active exertion : and in as far as regulations can have force, it should be made impossible for the soldier ever to go without it. It is sovereign against all the dangers of the morning—the damp, the cold, the malaria. The soldier, the man indeed every where, would speedily become faint without its support ; yet, unlike the dinner, it is a demand of the nervous system rather than the appetite of hunger requiring large supply ; for a full meal could not easily be borne at the time, and the slight stimulus of a cup of coffee will allay the call. Instead of this, the poisons of alcohol, opium, and tobacco, have too often been made the substitute ; and if the first, or something like it, be not furnished to him, there can be little doubt that he will seek (for he cannot do without it) the relief of the last.

But the soldier should be a cook in every thing else besides coffee. The kettle of his mess should be made to receive every thing edible he can lay his hands upon. He is to live by his kettle, and it ought to be as precious in his eyes as it was to the Turkish janizary in his *orta*. The art of cookery, in as far as he is concerned, may be explained in a few words : to roast and broil quick—to boil slow—to simmer and to stew, comprehend the whole. It is an unsatisfactory sight to behold the soldier's pot always in a furious boil ; and if that pot contain only a lump of meat under the process of hardening by such an application of heat, it displays both ignorance and stupidity, for the same meat

would have given flavour and relish in at least four times the quantity of vegetable food; contributing the support of bulk at the same time to afford a far more satisfactory nutritious meal. If this be the case in regard to the fresh ration of meat, what shall we say to the salt one?—always issued in the same quantity—but, that when eaten in bulk, unmixed and un-reduced by large admixture of vegetable ingredients, is a damnable dose, unsuited to the wholesome support of human beings—a provocative of thirst and drunkenness, as well as other diseased conditions of body. The waste is monstrous; but that is not the worst of it. The use of salt provision is to give flavour and zest to vegetable food, and then the fourth part of the full ration would be the proper quantity. It may fairly be doubted whether it can have any other. When made the staple of every meal, it actually, at one period of our history, paralysed the right arm of Britain, and rendered our fleets incapable of keeping the sea for more than a few weeks at a time, without being to a great extent unmanned by scurvy. But, whether the diet be salt or fresh, the soldier should be a cook; and, educated as he is, how can he be so until taught, if ever he be taught, by the experience and hardships of the bivouac? Where the Frenchman or German can live luxuriously, the Englishman will be actually in a state of starvation; and this he owes to the bad education and improvidence of his country. It may almost be doubted whether our peasantry, and the poor generally, ever give a thought to the due preparation of their food. They will eat what is prepared to their hands in the shape of a loaf of bread, or a lump of meat; but they have never tried to consider how it could have been better prepared—how it could have been made to go farther, and been productive of greatly enhanced enjoyment; and as is the peasant, so is the soldier. Our national schools I have acknowledged to be excellent for the inculcation of Scriptural truths, but their scholars have to live in this world, as well as to be saved for the next; and a manual of cookery, in addition to their bibles, is still a desideratum which never has been supplied.

Having now descanted sufficiently on the diet of our troops, let us, before we conclude, try to ascertain whether there yet re-

mains any way of escape from the evils of that drunkenness which has so long stained our military fame. I believe that there does, and a very simple one, in the abolition of canteens for the sale of spirits, and the establishment of savings' banks throughout every branch of our service. It has never yet been tried, and the late Duke of York was infected with an incurable prejudice against the last, believing that it would lead to combination among the troops prejudicial to military discipline. But this surely was imaginary, had any thing like due precaution been taken; and the good effects would soon have been apparent. I hold that savings banks, wherever established, prove the banks of virtue. The man who makes a saving from his daily pay has practised the first lesson of prudence and economy—has begun to reflect and to calculate, and in refraining from present sensual gratifications for the sake of future good, has given proof of virtuous self-command. He will, moreover, have broken the habit and practice of vicious self-indulgence (for habits become second nature), and acted the part of an accountable rational being, in resisting the temptations that formerly led him astray. It can only be through such training as this that soldiers are ever to be weaned from drunkenness; and until the resource of savings banks be established, acts of Parliament will be directed in vain, and sermons may be preached, but the iron rod of martial law will still, as hitherto, be broken. A little reflection will show us how this state of things could not possibly be otherwise than it is. The soldier has always some money at command beyond what is required for the mess. In foreign service he used to have a great deal; and what could he do with it but carry it to the canteen? Could he carry it in the shape of a bag of dollars in his breeches pocket, or in his knapsack, until his return from the West Indies, or wherever he might be? Could the officer do it without the assistance of the paymaster's bills; and how could we expect that the soldier would do otherwise than drink it?*

* Difficult as may be the preservation, as above described, it must be owned that it is not absolutely impossible; for Scotch highlanders have done it with the view of succouring dear relatives they had left behind in their native glens—so strong and ardent was the affection of these virtuous men.

these considerations, that when I was in the West Indies I addressed the following to the Commander of the Forces, dated Barbadoes, 1816 :—" I can conceive no necessity or propriety in having a canteen in the barracks at all, for the sale of spirits, in order, it would seem, that the temptation of procuring rum might ever be present to the soldier, when he has money in his pocket ; and as long as this temptation is before his eyes day and night, it is not likely that he will ever think of spending it in any other manner. The reason for permitting a canteen in every barrack, to be kept by the officers' messman alone, is not a warrantable one, for the officers can have no right to live cheaply, to the prejudice of the morals, health, and discipline of the ignorant soldier." After going on with some of the arguments in the foregoing pages, which need not be repeated, I came to the one of which we are now treating. " A more radical remedy might be found in the opening of savings banks in every corps, under the direction of the officers, leaving to the soldier always the option of selling his rum, and becoming a contributor, or drinking it in the usual manner. The experiment may appear ridiculous, but it never has been tried," &c. On my return the following year to England, I waited upon Sir Henry Torrens, then Military Secretary to the Commander in Chief, with the heads of a plan for establishing these banks, but found, as already stated, that his Royal Highness was strongly prejudiced against them. In the year 1835, I however again recurred to the subject, in an article in the *United Service Journal*, and as I understand that the present Secretary at War has taken up the subject, it may be hoped that through his influence and authority this great and most beneficent reform may at last be carried into effect.*

The army canteens, so strongly animadverted upon, have ever been an institution of drunkenness ; and it is difficult to believe how an abuse so monstrous, and a nuisance so palpable, could have been tolerated so long, and to such an extent. It shows

* Since writing the above I perceive that the present Secretary at War has at last succeeded in establishing this most beneficial reform—a reform that strikes at the root of an enormous evil, for which he well merits the thanks of every friend of the army, and will be rewarded by the applause of all succeeding times.

the difficulty, in our service, of carrying even the most obvious reforms into effect, when any thing in the shape of improvement comes to be proposed, to the disturbance of existing interests, or even bad habits of any kind. If kept up at all, it must have been from the high rent that was paid to the barrack or other departments ; but how these authorities could reconcile the gains thus obtained, at so much deadly cost, to their consciences, must remain a problem which it is not for me to solve. These very canteens, in the course of last war, destroyed whole armies to the country ; yet, even now, I would not altogether abolish them. Let the fiat go forth prohibiting in them the sale of spirits for ever, but keep them open as sutler's booths, and markets for the sale of fermented drinks, and all the little wants of which the soldier otherwise would be compelled to seek the relief amongst the hucksters of the neighbourhood. Habitual spirit-drinking has ever been the bane of the army (in Scriptural language, the accursed thing). Fermented liquors (beer) do not have the same bad effect, and the cases of the beer-drinker and the spirit-drinker ought to be considered as widely different. The first may be used with comparative safety, as, besides being far less pernicious in itself, the acids and mucilages with which it is clothed beget a repletion of stomach, that often compels the most determined drinker to halt in his course, and unfits him from renewing the debauch on the following day, until stimulated with a dram. It is possible, even easy, to be made satisfied with an allowance of beer short of intoxication, and so to assimilate it as an article of diet and nourishment, that a diminution rather than an increase of the dose may become more agreeable to the organs of digestion. From beer, then, the soldier need not be debarred. Indulgence in a certain degree carries its own cure. Without spirits, fermented liquors will rarely make him a drunkard, or impair the man's bodily powers. He can stop in his course without feeling the utter misery which deprivation of the first is sure to create, or even with the pleasurable sensations which a short forbearance from the enjoyments of the table conveys to the luxurious. Hence the justice of the remark, that a wine-growing people (I speak not of the brandied wines that are drunk in this country,

but of the *vins de pays*—the beer, in fact, of other countries) is never a drunken one; those who practise distillation the reverse.

Even the form of intoxication which results from alcohol is different, as being more fierce and atrocious, compared with the somnolent stupidity of the drunkard gorged from the beer-house. The one may be defined the stupor, the other the frenzy of drunkenness; and if this be true in respect to the Army, what shall we say to grog-drinking in the Navy, where at least one-half of the shipwrecks and the burnings, and nearly all the mutinies, have been caused by it? The war of a quarter of a century has passed away, and we have indeed reason to be thankful that in the course of it no national disaster ever fell upon us through the drunkenness of the soldiers. In the army of St. Domingo, we had somewhere about a week of drunkenness at every muster, and I have seen the troops then in such a state that no parades could be formed for days together, and it was a matter of difficulty to procure men in fit condition to take the ordinary guards. This occurred regularly once a month, and a vigilant enemy might then have easily surprised our strongest garrisons. I trust and believe, that the alarm of an advancing enemy might have caused them to refrain; and to me it was a great delight, when in one of the great naval actions of last war, where I chanced to be present on board the flag-ship, to observe that instead of the full ration of spirits, only half allowance was issued, and that was placed, in a state of large dilution, in the keeping of every captain of a gun, to be used only for the quenching of thirst.

But at all other times, grog, grog, was still the cry. I have seen it as it were forced down the throats of the innocent negro boy and the uncorrupted young recruit. We seemed to believe that the term *aqua vitæ* was its true designation. Every one was to have it—no matter what the age, the colour, the country, or the breeding. Our Portuguese allies in the Peninsula were the soberest of mankind. They liked their own weak country wine to dilute their food; but that would not do for us. We actually went for the rum of the West Indies, and gave it them; and at the battle of Busaco I saw a party of Portuguese artillery, as soon as the rum ration was served, as if they had been possessed by the devil

(and they actually were possessed by a devil in the shape of alcohol), draw their swords to fight with one another when actually under the fire of the enemy.

Much has been written by Sir Andrew Halliday and others upon the unwholesomeness of salted meat in hot climates, and the propriety of always substituting the fresh meat ration in its place ; and no doubt the first, eaten in bulk, is altogether as bad as has been represented ; but I cannot concede that a full allowance of the latter, without large vegetable admixture, is best suited for young soldiers on their first arrival in the West Indies, or a diet best adapted for saving them from the malignant seasoning or yellow fever. If they understood anything of cookery, little could be said against it, except that an abundant vegetable ration, duly mixed and seasoned, would be far better ; and this I believe to be consonant with the truest physiological principles, where considered in relation to temperature and climate.

The Esquimaux, in the hyperborean regions, hunts the seal for food, and riots in the oil of whales. The preserved grain he has never seen, nor tasted vegetables beyond the transitory productions of his short-lived summer. Such food would poison the negro between the tropics, who, even in Africa, seldom ventures beyond the vegetable oil of palms, and derives his principal sustenance from the fruits which the woods furnish, or the preserved harvests of his rice grounds. We are not rice eaters, and the common soldiers are everywhere imbued with prejudice against fruits and vegetables. The climate brings dysentery, and if they have tasted fruit within any recognizable time, the cause of the disease becomes in their minds self-evident.

I am not advocating the use of new vegetable aliment to excess, or anything like it, but the dried preserved grains, made savoury and palatable, must ever be the best provision within the tropics ; and even when neither savoury or palatable, I believe them to be a far more saving diet than any purely meat ration the commissariat can furnish.

Our canteen system will in after times be viewed with horror, and astonishment at its folly, corruption, and recklessness. One was established, wherever soldiers could be stationed, for the ex-

press purpose of vending what was called good rum to the troops, and visiting officers went through the farce of testing the qualities by tasting it. But the canteen messman knew the soldier better. Old rum did not suit his palate. He liked the new, which was stronger and more pungent, because containing a poisonous essential oil that gave it a peppery flavour, from which it could only be freed by long keeping in casks. With this last, as soon as the inspection was over, the soldier was abundantly supplied, and the messman could reckon his gains by counting heads, the whole of the officers' money (always a considerable sum) passing into his hands for rum. In this way were the men, after the monthly settling day, regularly laid up in hospital by hundreds, where they were as regularly decimated for the grave; and this went on at every muster, establishing an ever open drain upon the lives of the troops. The officers not being rum drinkers—at least not new rum drinkers—were not so destroyed by the poison which it actually was. When the malignant seasoning yellow fever fell upon a corps, they always suffered in fully as large a proportion as the men, but when that had passed away, they often, I may say generally, became very healthy, while the men remained under the above-described course of decimation and waste. The foregoing is no exaggeration. In the years 1815-16-17, I made it my business—considered it my duty—to visit every station in the West Indies where soldiers could be quartered. I went wherever a punt could be rowed or a horse find footing. Many of the stations were as remote and difficultly accessible as can be imagined, but I never saw one where the first establishment was not that of canteen for the sale of rum*. Must I say it, the men were to die of rum—new rum—that the officers might live—have a mess! This I conscientiously believe to be a true statement of the case. I am not pretending to say that, formed as our army is, the men, when landed in a country of rum, would not generally become drunkards, but they would not all become drunkards of necessity

* Were the black people encouraged to drink it, by having the soldiers' custom, they could furnish many others of a similar kind under the name of *popmawbee*, and such like, the composition of which I now forget; I only know that they were all very good, very cheap, and very palatable.

and by intuition. The training began on the first day they set foot on board to embark for tropical service. All were fairly started on rum, and this was surely a deed of gratuitous evil, for porter can be carried to the East and West Indies; and that liquor, so corrective of a salt meat diet, could have been laid in for them (allowing every one a pint a day) at about twopence per man. They would in that case have landed uncorrupted and unvitiated. The want would not have been created, and although porter might then have proved too expensive for the soldier's purse, spruce beer, diluted tamarinds, and lime juice, &c. could always be had: all of them delightful solutions, drinks as well calculated to assuage heat and thirst as rum is to create both the one and the other. By this time I fear my readers must have been completely tired of the subject. I have been speaking of the service as I knew it years ago. I trust it has, long ere this, been reformed, and the national guilt, for such it was, been washed away.

OF FEVER AS AN ARMY DISEASE.

THE term fever is as mysterious as it is comprehensive. It is, in a great degree, peculiar to the human race, and never, as an idiopathic disease, affects the lower animals. The uncivilized man appears to possess, to a certain extent, an exemption, for the negro tribes feel little of malarious fever, and the Indian races are far less subject to it than the European. With the last mentioned, however, it is, more especially during war, by far the widest outlet of military life. Send troops where we will they are destroyed by fevers. Into barracks at home? the contagions of accumulation creep in amongst them. To Walcheren? they are devastated by the autumnal malarious pestilence. To Spain? the same is perennial. To the West Indies? it invades in terrific bursts of yellow fever. In short, wherever troops go, they generate, or are overtaken by, this destroyer. Have we any safeguard? None, but in the good keeping, good condition, physical and moral, of the troops. No remedy after the disease is established, none whatever in the way of physic; for the best physician that ever existed will lose more patients than the most ignorant hospital mate, if he neglects the precautions of discipline and cleanliness; and if both be on a par in this respect, the event will, in nine cases out ten, be precisely the same. Hence it appears that physic does nothing, and has done nothing, towards establishing a better mode of treatment since the days of Hippocrates. The battle is to be fought by the nurse, whether in the shape of physician or other attendant it matters not; only let that attendant be sagacious and diligent, and the patient is saved,—the contrary, and he dies. The bleeders, the purgers, the bathers, *et hoc genus omne*, are all equally useless, or we may say all equally pernicious, if they be bigoted to a system, or believe that they possess any

control over the disease beyond that of mitigating and moderating symptoms as they arise, inspiring hope by their presence, and, by an enlightened pilotage, guiding the patient through the dangers which would equally beset him from officious ignorance or mistaken system. Fever will run its course in every climate and in every constitution. It cannot be prevented; and so completely is its dominion established when once begun, that even the worst practitioner, that is to say the one who interferes the most with violent remedies, cannot always kill his patient. Some will drain his blood *à l'outrance* under all circumstances; others will refuse the lancet even in the cases of the most sanguineous and plethoric. On the one hand, you will see the disciple of Brown filling him with wine, as if into a cask; on the other, the sinking patient is denied a drop, and dosed with the most sickening nauseous drugs.

During the earlier years of my professional life antimony was held to be specific in the treatment of fever. In fact, whatever may be the fashion of the day, the prescriber, when his patient recovers, ascribes all to his medicines, instead of the health discipline that his presence enforced, and the confidence it inspired. Where there are fashions in physic there can be nothing true—nothing established on the firm basis of facts. Hence we see in one decade of years the favourite practice of the day utterly discarded at another, to be again revived, and again decried, in similar rotation; and could the great father of physic arise to review the art he had left behind him, he would find it had undergone as many mutations, counting by decades of years, as the flitting figures of a phantasmagoria, without the treatment of fever *by medicine* in any way being advanced or improved. This cannot be an unjust sentence; for who that has lived long has not seen the lancet utterly discarded from practice, and again hailed as the sole instrument of safety; or been made to believe at one time that fever could be extinguished by deluges of cold water (the best practice, by the by, if used at the beginning of the disease), or by gestation in the open air, or by the cinchona, or by James's powder, or by any thing else? It is the *gastro-enterite*, cry the disciples of Broussais, and there can be no cure but the leech. It is cerebral inflammation, respond the followers of Clutterbuck, and

the only remedy is venesection. Purgatives are the true treatment, proclaims the Edinburgh school. They are irritating and dangerous, replies that of London. In fact, all are equally right and all are equally wrong, if they fail to note times and seasons, the nature of the epidemic, and the characteristic tendencies of the patient's constitution, his powers to bear the operation of medicine, and his ability to resist the tendency to death. There can be no treatment of fever by physic but in studying the *juvantia* and the *lædientia* of the case—cultivating the first, eschewing the last, and never forgetting that there is a mighty power always operating in your favour—the *vis medicatrix naturæ*. Do not thwart her beyond the mark, and she will get you through difficulties with which, without her aid, you could not cope; but the physician who believes that he possesses, beyond these, medicines of specific power in fever, really should have his own license suspended, and himself be put under cure, until the monomania subsides. He will otherwise commit most gratuitous havoc, and sacrifice many lives to the vindication of his creed, which would, in all probability, have been saved had he walked humbly in the path described.

Fever is everywhere our most dangerous disease, and whoever, through prejudice, refuses the aid of the lancet under any circumstances, will have the sin of omission branded on his soul when called to his account for the lives committed to his charge; but his case will be far worse who, as a matter of system, indiscriminately uses it upon all who are brought before him. He will then have offered sacrifice in vindication of a creed that was baseless, and the sin of commission will be deeper and more indelible.

The treatment I have found the most successful in various countries and climates (the necessary evacuations always being premised) is cold water, or, in other words, the regulation of temperature; or, to humour the fashion of the day, saline draughts, which, being so many glasses of nothing, are the same as cold water,—and on this *médecine expectante* stand prepared to meet whatever contingent symptoms may arise. These last, in themselves, are no part of the disease (fever), and can only be considered as superadded and adventitious. Too many, deceived by post-mortem appearances, take them for the disease itself, and on

these build theories the more fallacious from seeming to be supported by evidence, or even demonstration, instead of being the growth of circumstances that have arisen during the disease, or mistaken treatment. The essence of idiopathic fever has hitherto eluded our keenest research. It is not inflammation of itself, however the manifestation may appear to indicate it; and its phenomena are mysterious and inscrutable, for, until it has fulfilled the purposes of its presence in the system, it is scarcely to be disturbed by human interference: for if we abstain from unnecessarily draining his blood, the patient is with difficulty poisonable. We may say, he can scarcely be killed or cured by the practitioner through any measure short of actual homicide. The Chinese consider alcohol to be the best febrifuge. So do, or did, the Norwegians*; and the works of the celebrated Brown, in support of the same belief, are too well known to require more than a passing notice.

When I was last in the West Indies, I was at pains to authenticate the records of a case of fever where the patient had been made to swallow, previous to his decease, 960 grains of calomel, without ever showing symptoms of salivation or constitutional affection in any way—as much, in fact, as would have destroyed twenty of the strongest men, had they been left in possession of the actions and the attributes of health†. Mercury, in its accumulative power, better deserves the name of an alterative than any other known medicine. All inflammations, not too rapid in their course to be overtaken, are superseded by it; and were fever true inflammation, which it is not, it would fall before it like the rest, but as the above case, and hundreds of cases in tropical practice, will show, it is utterly powerless. The patient, no doubt, will often recover with a sore mouth—so would he recover if he had only taken water gruel, without the additional risk of dying the cruel death of protracted salivation. While the patient was in fever, the mercury, “calomel,” did nothing for him—it might as well have been put

* Vide Laing's Travels, and others.

† Bancroft, in his Essay upon Yellow Fever, under the article Mercury, alludes to cases where 500, 1000, and even 2000 grains of calomel—mercy on the medical stores of an army remote from its supplies!—had been given.

into his nightcap as into his stomach. But when fever ceased its rule, and the healthy actions were restored, mercury then evinced its powers, and the pœans, in praise of the wonder-working remedy, as displayed in the salivation, were raised to the skies*.

It was Chisholm, in his well-known essay on the introduction of the yellow fever into Grenada, where it must have been occult ever since the world began, and only waited for the presentations of its pabulum from the colder regions of the earth, who, I believe, first proclaimed to the world the wonder-working powers of calomel in its treatment. By his own showing—vide Bancroft—almost all his patients, being first cured of course, died under the remedy. There is no medicine to which I have not given, and seen given, fairer trials in different countries of high temperature, and at distant intervals; and wherever the epidemic was severe, the result was just the same as amongst the patients of Chisholm. In fact, mercury, as a general remedy, is nowhere adapted to the treatment of fever, yet I believe the conviction of its efficacy still holds its ground in the West Indies. This was so true when I was there, that the surgeon of a fifty-gun ship refused to proceed on an ordinary cruise until I had first supplied him with four pounds of calomel; so great was his dread of the yellow fever and faith in the preservative.†

The lancet has been cried up as the true remedy in tropical fevers even more enthusiastically than calomel. I believe it is at present in discredit, but its time will come again, just as surely as ingenious men will arise to impugn the theories of their predecessors and to build up their own. There never was a more re-

* While sojourning in the Island of Martinique, on my way to St. Domingo, in the early part of last war, a patient, afflicted with the vomitings of yellow fever, drank by mistake a lotion of sublimate of mercury, and presently, as a certain proportion always did, got well. The case was proclaimed abroad, and the true remedy was said to have been discovered. Punch was declared to be the best vehicle; and the sublimate punch, like the white mustard seed or the brandy and salt at home, had a run. I believe a short one, however, for I never heard of it after I left Martinique. The remedy was evidently too heroic for common use, even in the hands of the most enthusiastic discoverer.

† Toward the close of the last war, the ships of the West India squadron drew their medicines from the army medical stores of which I had the direction.

*Chisholm's
in spirit
the
Lancet
who declared that
the Lancet was wrong*

markable instance of revolution in the practice of physic than we witnessed during our campaigns in the Peninsula. In the days when Le Sage wrote, its practitioners must have been the greatest blood-spillers in Europe, but during our sojourn the lancet was utterly proscribed. Even to mention it would have savoured of something beyond the limits of ordinary toleration. In the hospitals of Portugal, which were more particularly under my own charge, whenever I called for it to relieve the strangulation of congested lungs or the stupor of oppressed brain, I have seen the officials, forgetful alike of discipline and respect—of which, at all other times, they are most observant—rise in what might be called insurrection against the dreadful mandate, and throwing themselves between the patient and the operator, arrest his arm until a priest could be found to administer the viaticum preparatory to the sacrifice. More than thirty years have since elapsed, and it is odds that the lancet may by this time have regained its empire, and be in its turn as much extolled, and I fear abused, as it was then decried.

Fever, when once it has gained entry, is the most tenacious of all preoccupants. It has laws of its own, and refuses to obey any rules but those of the *vis medicatrix naturæ* or the stern mandate of death. Rhythm—the rule of number counting by days (vide Jackson)—as if it played upon the nervous chords: paroxysm—remission, and crisis—proclaim its sway. It prevails from day to day, because it has obtained possession, and the saving power has for the time been placed in abeyance. Clear the way for her—remove all obstructions—she may yet come to your assistance; only be ready to throw in your aid when the proper time arrives. Does the practitioner doubt this? Let him turn to his books, and, in the medical records of two thousand years, what does he find in the ever-varying evanescent theories of medicine, but the same results, viz.: the futility of interfering with medicines of specific power, and the deaths of a given number, almost always the same, when the air is pure and the patient has had anything like fair play. His business is not with a disease which he cannot touch in turn with his prescriptions, but with the symptoms that are adventitious, secondary, and superadded. Let him obviate evil

tendencies whenever he can, and he will thus often be enabled to blunt and turn aside the shaft of death. Quina, the principle of vegetable tonicity, which is anything but an antiphlogistic, from its positively specific power in simple fever (intermittent), would appear to be the very thing sought for; but do not yet cry "eureka:" it will be found as futile as all the others in what are called continued fevers. The practitioner must content himself with taking for his guides depletion at the onset, refrigeration during all the middle stages, and stimulation with support at the close of the disease. These guides, if any, will keep him in the right course. They may all be practised with very little aid from medicine, and the event will be more successful than if the patient had been drugged *usque ad nauseam* with all the trash of an apothecary's shop. But notwithstanding all this, every mediciner will boast of the cures he has performed with physic, and deem himself infallible in the treatment of fever and all other acute diseases.

OF DISINFECTANTS.

OF these, we have some that are in constant operation, just as surely as the wind that blows, and the course of the elements that circulate around and above our heads. We do not ordinarily recognize them as disinfectants, yet are they familiar, simple, and sure, being, with one alteration, the old vulgar elements of our more unlearned (chemically speaking) forefathers. They comprehended the physical world under the heads of fire, water, *earth*, and air; and if we now define them to be caloric, light, ventilation, and the operation of water, we shall have enumerated all that is necessary for the purposes of disinfection. These constitute our preservers, through whose operation our existence is permitted here below, for otherwise every, even casual infection, that when once called into existence, through multiplying itself in arithmetical progression amongst the gregarious races of men, would infallibly go on to extirpate the human race; but there is a power unseen that disarms the destroyer, and thus preserves us even without our knowledge. To take the first of the above, fire, or caloric. This alone is all-sufficient for every purpose of disinfection; of course, I do not mean in its consuming sense, but in the way that it may be domestically used. Its operation is immediate and infallible, and no infection of *fomites* can exist after its application, in any thing like an affecting form. This is no matter of assertion or speculation; it has been put to the test of direct experiment by the late Dr. Henry, of Manchester, who found that even the concentrated matter of small-pox, cow-pox, and the fomites of scarlatina, were deprived of all inoculating or infecting power, on being subjected to a heat of 140° of Fahrenheit's thermometer. Experiment more important than this—more replete with the grandest results to the best interests of health, has seldom been verified; for it may fairly be inferred,

that if these could be so neutralized, the gaseous factitious ones, such as that of typhus fever, would be dissipated under a much inferior degree of heat, because, as has already been shown, that disease will not readily cross the tropic of Cancer; and the plague of the Levant goes out at the same boundary. Boiling water, then, must be all-sufficient for the purification of whatever it can be made to touch; and a portable iron stove, filled with ignited charcoal, will infallibly disinfect any building or apartment. It is through such a process as this that the Russian peasant, although reputed to be the nastiest, personally, in Europe, never has typhus fever when in his own country, for he heats the stove of his cabin to an extraordinary degree, day and night, and uniformly takes a vapour-bath of the hottest kind once a week or oftener. He in fact lives under a course of disinfection. It is not that we have no other disinfectants as sure as caloric, but it is because its effect is immediate, and practical under a domestic form; for such a heat, conveyed in water, can be borne by the hand, and in the medium of the atmosphere may be breathed without danger. With such a power, that can be wielded at will, is it necessary to go further? for here we have the infection from fomites at command, and the secret of disinfection is at once disclosed. The infection from the living body constantly giving out the fresh material, cannot of course, while it continues diseased, be so disposed of; but all that it has inhabited in any way is thus rendered harmless. We know that this efficacious safeguard has not always, nor even generally, been confided in; and it may be interesting to learn how true contagions, without its aid, came always to go out of themselves. Light is another sure disinfectant—sure even in itself, without other aids, through which in the course of time all contagions will be disarmed; but the time necessary for its operation is indefinite, and the practical resort consequently unwarrantable. Do we doubt its efficacy? see it applied to the strongest poisons, such as prussic acid, in glass vessels hermetically sealed; the article will soon be made as little poisonous as salad oil. Or where, in a short time, would be the virtue of our strongest medicinal powders so exposed—the sting of our Cayenne pepper—the efficacy of digitalis? Ventilation

comprehends all that the atmosphere can bring to the process of disinfection ; and water is only a more concentrated application of the same principle. With all these at command, what are we to say to the wisdom, not of our forefathers, but of our contemporaries, who bestowed high Parliamentary reward on the discoverer (although, in fact, he was not the discoverer) of chlorine fumigation, as the preserver of our fleets and armies in every part of the world ? It was at least a work of supererogation, and it might be mischievous, because it could not be performed unless to the exclusion of ventilation ; and when performed, I can vouch for its utter uselessness. There are few climates, few situations amongst congregated men, where I have not seen it employed—in the crowded hospital, in the foul transport, in the infected ship, in the ill-aired barrack ; and I never saw it of the smallest service. Typhus fever, hospital gangrene, and all the poisons of accumulation, held their course untouched, until ventilation was allowed free scope, and separation of the sick effected ; but if we examine it chemically, is it not more than probable that we may have been in error *ab incepto* ? Do we know what the matter of contagion is, and can we tell whether it is in its essence an acid, an alkali, or any thing else ; and may not the addition of the first, in a concentrated form, have been adding to, instead of diminishing, its powers to do evil ? It certainly did the latter, wherever it was made to supersede the omnipotent disinfectants furnished by the great Creator in the elements that surround us. The poison of infection is generated from man's own body as frequently as from any thing else ; and, paradoxical as it may seem, the infection is made to serve as the monitor of his life and protector of his existence ; for he has been placed on this globe of earth with the evident intention of perfecting his being here below, through the progress of mind, and the advances of civilization. He has been constituted a gregarious animal ; but to that gregariousness have been affixed limits, and, when these are contemned, the caveat is promptly made to appear under the form of contagious disease. All other animals are furnished by nature with clothing to their bodies : man alone has been left to find his own, and to discover, through the operation of that reason with which he has

been gifted, that, if he neglect the decencies of supply and change, he will be visited in the first instance with the most loathsome of the plagues of Egypt, and, in the course of time, generate the worst contagions that can be inflicted upon himself, or communicated to his fellow men. Heaven sends diseases, it is true ; but the channels of their transmission are our own abuse, or neglect of the very means that have been given to enhance our well-being, and prolong our lives ; and the animal poison that has been generated through accumulation in the unchanged coverings of the human body, has often proved as fatal and deadly as the worst malaria of the fens. The magistrate on the bench has been infected by the criminal standing before him ; and at the celebrated Black Assizes at Oxford, so called from their fatality,—the no less celebrated Old Bailey Sessions in 1750, and others,—nearly the whole court, including the jury, were struck with jail fever, through the circumstance of an open window, behind the dock where the prisoners were placed, sending a current of air from them during the whole day, upon the assembled people ; and not the least wonderful part of this remarkable occurrence, was the fact that the prisoners themselves had not, at the time, the actual disease they were thus communicating with such fatal effect. They were not then in fever, because their constitutions had been so withered and benumbed through the long application of the poison which they carried about them, as to be incapable of throwing it off by the channel which nature had decreed, of acute disease. They resembled, in this respect, the inhabitant of the swamp, who, although never healthy, and destined certainly to an early grave, will often show nothing of marsh fever until he be removed to a healthy country, and then, if he has any powers of constitution left, it will most likely break out upon him ; and so will the miserable jail criminal, when restored to purer air and better clothing, in all probability throw out the fever which he had long imbibed, but could not assume. Let us hope that such a calamity as the above is not likely to occur amongst us again, for now we know that the burning of a few handfuls of charcoal, with the aid of clean linen, will certainly disinfect the most saturated lazar that ever came out of a pest-house ; but until that ceremony,

or an equivalent to it, such as a hot-bath, be performed, no one can answer for his being otherwise than dangerous.

The disappearance of contagions long before the disinfectants of the foregoing pages *can* have had time to operate is often as mysterious as their rise. Epidemic contagious diseases have, I believe, a far wider range than we have generally been disposed to allow them, and whenever they prevail, may be considered as much atmospheric as contagious. Medical authors have often ventured to define with precision the distance to which contagions can extend from their living source in the sick-bed, but when they so commit themselves they must be met by insuperable difficulties. Could we discriminate with anything like truth the diseases that are purely contagious in themselves from those that may become so in the course of an illness—could we distinguish with accuracy between the epidemic and contagious current of disease, or ascertain what belong to the epidemic, the endemic, and contagious sources—the difficulty would be greatly lessened; but this has not yet been done, and in the case of small-pox, the most undoubted of all contagions, so far from its range being confined to a few feet, it would appear in many instances to have surmounted ramparts and made its way over or through stone walls. The guarded gates of the Royal Palace could not be barred against it, for Queen Ann lost her children from small-pox, Edward the VIth died of the same disease, so died Louis the XVth of France*, and Catherine of Russia sought the protecting shield of inoculation, at that time all but unknown in her vast empire. It is not to be surmised that any of these ever came within the supposed infecting distances from the sick-bed. Its power to infect in the minimo infinitesimal portions must also be acknowledged. Thus, when our babes are carried out in arms into the public walks, they are often struck with the disease from passing even momentarily to leeward of an infected subject. The extreme minuteness of the agent would appear to derogate as little from its efficacy as it does on the poison of the serpent's tooth, or the hydrophobic dog. Accumu-

* The reported manner of his being infected is at least problematical, for infection can scarcely exist in the earliest stage of indisposition before eruption appears.

lation—quantity—is supererogation. Even the purity of the atmosphere at the moment of infection may add to its virulence, for then the poison is received pure and unmixed from its source. No one proceeding to inoculation would choose to dilute and obtund the variolous fluid with other matter. Such would only lessen its force ; and the same rule must hold good in all the cases that have just been stated.

Variola is unquestionably a pure contagion that has either been introduced from other lands (China has been suspected), or arisen among ourselves from some casual combination of circumstances at one time, that is not likely to occur again ; for it has been unknown in all newly-discovered countries until carried there by direct communications from lands that have previously been infected. The strictest quarantine in such a case is called for on every principle of health police, for small-pox could be banished from any country by due separation of the healthy from the infected. Inoculation, which then could have done so much, effected but little towards this end, for the object was not the extinguishing a disease, but the safety of an individual at the risk of communicating it to the public, with all its contagious properties, through a changed channel ; and really the experiment so conducted well merited all the indignation that was at one time poured upon it.* Vaccination has done much more, and is capable of effecting all, but in medicine the liberty of the subject, so highly prized by Britons, means in this case the liberty of inflicting cruel injury on the community, and while prejudice thus continues unbridled, we shall never be able to expel small-pox from the land.

Quarantine, too, which is ever so active when it can only be useless or mischievous, has always been asleep here. It has never helped the disease out of any country, although in all probability it is the only one that can be said to be completely within its

* The pulpits resounded with denunciation of the impious men who thus ran counter to the will of the Almighty ; and the Rev. — Massey, in one of the London parishes, preached that inoculation was the offspring of hell itself ; that the devil was the first inoculator, and the patriarch Job was his first patient. The enraptured congregation insisted that the sermon should be printed ; and in this way has the precious document descended to our times.

controul. It revels in the futilities and imaginary dangers of plague and yellow fever, while it shuts its eyes to a far worse pestilence than either the one or the other.

Scarlet fever is unquestionably both an atmospheric and a contagious disease, for when epidemic it will prevail everywhere, even in the most isolated and best protected dwellings. Crowding and accumulation, with all the accompaniments of filth and misery, seem little to influence its speed. Unlike typhus fever, it is far from being the disease of the destitute rather than the affluent, and will invade the lordly mansion as readily as the hovel of the pauper. In the town where I have lived many years, and where the infection in a sporadic form never dies, I have seen it go out of itself in the foulest lanes of a depressed population, where no disinfecting precautions could be taken, and invade the healthy rural district, at a short distance, fully on its guard, with every seeming security of isolated habitation and domestic purity of living. In a thinly-peopled locality of Scotland, I have even known a large family severely scourged by its pestilence without any traceable, or even supposable, exposure to infection: the nearest cases of the disease being in a town fully twenty miles off, with which the family held no direct communication. Surely the atmosphere must have been at work here, the same as when in particular seasons it causes puerperal fever, erysipelas, and influenzas to prevail. In fact, wherever the true contagions (such as scarlatina and measles) make their epidemic visitations, they pervade equally all classes of the community. I would almost say the better ranks in preference, for it is amongst them that the most striking instances of fatality and contagion, notwithstanding their smaller comparative numbers, are often found. Locality, climate, season, temperature, would appear to have nothing to do with it. The visitations of the disease are independent of them all, and it generally disappears as unaccountably as it arose. The disease, when once established, is beyond all doubt contagious, but its source is endemic or atmospherical, and although, by avoiding communication with the sick, we may lessen the means and chances of propagation, we can never extinguish the disease while our atmosphere continues as it is.

DYSENTERY.

DYSENTERY is truly an army disease. In some services, the soldiery, when in the field, may escape fever, but never dysentery, if they lie upon the ground; for it depends on atmospherical vicissitudes, and the cold of the night and the chill of the morning after the heat of the preceding day will always cause it to spread. Heat, however, is uniformly the remote cause. It must exist to a certain degree for a given time—without it there can be no dysentery; and hence in all European countries it is more or less a summer disease, never a winter one—in hot climates it is always present. To armies in the field it has always proved a cruel scourge. It does not at all times run the rapid course of an acute disease; and, when it assumes the chronic form so often incurable, the sufferer exhibits a spectacle of distress of as pitiable a kind as can be found in the history of human misery. In Great Britain, where camps are rare, and hot seasons unfrequent, the medical profession sees little of it; and hence the schools of medicine, ever eager to add the terms of contagion to the dangers of disease, have caught at this as an instance of the first. The medical staff of the army have for half a century been reporting the direct contrary, and the veriest tyro that ever served a campaign, or lived in an encampment, could have taught them better; nevertheless, as if contagion was too good a thing to be parted with unless on compulsion, they have stuck to their text in the face of multiplied experience and evidence, and no pupil is permitted to leave their walls until fully imbued with the true orthodox belief of the contagion of dysentery. Every one will allow that it may become a contagion of accumulation, in which a contagious atmosphere, such as that of a crowded hospital filled with dysenteric patients, or a close impure apartment of any kind, may be generated, but dysentery, in itself, is no more a contagious disease than hæmorrhoids or

catarrh. With or without contagion, it is, however, a fearful disease, and, if allowed to run its course unrestrained, leads to results the most calamitous. Luckily there are few better under the control of remedial means timeously applied ; for, unlike fever, it is easily brought under the control of medicine. The antiphlogistic treatment has the happiest effect at the beginning of the disease, and mercury, in its alterative power, is all but specific, provided it be applied before lesion of structure and alteration of form has been effected in the great intestines. At present there is no disease, the symptoms of which are so obvious that they cannot be misunderstood, even by the most ignorant, as dysentery ; none for which the remedies and treatment, with one important omission, have been so well defined in army practice. There is still, however, much folly and prejudice in the ordinary management of the complaint. It is purely inflammatory in the beginning ; yet, because the acid and subacid fruits sometimes occasion griping when in health, these, and vegetables of every kind, are strictly prohibited. They are, however, amongst the best remedies. Nearly a hundred years ago, Sir John Pringle, one of the best physicians our armies ever possessed, proclaimed that ripe grapes were a cure for dysentery. The Portuguese and Spanish physicians, when I was in the Peninsula, went farther, and to ripe subacid fruits of every kind, added lemon-juice, with the best effects. Our own faculty, in different parts of the world, have highly lauded the mineral acids, more especially the nitric, and, in an epidemic dysentery which not very long ago afflicted Ireland, after one of our hot summers, cream of tartar in large doses was found to be nearly as beneficial as mercury ; in short, the acids, in every shape, but more especially in that of ripe fruits, will be found excellent remedies by all who can overcome their prejudices so far as to give them a fair trial. But the subject of acids and acid fruits in the treatment of dysentery requires yet further illustration, and I think I cannot do this better than by quoting from myself part of a paper that was read before the Medical Society of Windsor, and afterwards published in the October number of the *Edinburgh Medical and Surgical Journal* for the year 1837.

“Some writers among ourselves, even as long ago as the times

of Pringle, in the war of 1746, have ventured to recommend ripe grapes in dysentery (a practice of which I have, in my own person, experienced the benefit), but they have uniformly been beaten down by the universal cry against apples in Devonshire, oranges in Portugal, limes in the West Indies, and fruits everywhere. The strawberry, the gooseberry, and even the more justly to be suspected cherry, however immoderately used, have been an exception to this outcry among ourselves, escaping blameless, because these, the earliest of our summer fruits, have, in fact, passed away, as will presently be seen, before the season of dysentery comes on. The Spanish physicians, however, have long adopted the juice of lemons into the list of their remedies, and I can speak to its safety, I may say to its efficacy. The late Dr. Cappel, a most promising young physician on the staff of our army in the Peninsula, on his returning from Spain into Portugal, in the year 1811, was so much struck with what he had seen in the former country, that, when severely attacked by dysentery at Coimbra (then one of our principal hospital stations), and attended by myself, he rejected all remedies but lemons and oranges. He speedily recovered, and I afterwards saw him follow the same practice in the hospitals and among his private patients with as much apparent success as attended any of the approved modes of practice then in vogue. In Trinidad, too, when a dysentery of uncommon malignity appeared there, Dr. Lynch O'Connor found that lime juice, administered by the mouth and in *lavement*, was the only remedy that could be depended upon: of this he sent a report to me, and I gave it to be published in the above-mentioned periodical."

Dysentery has prevailed, in a considerable degree, amongst ourselves during the last two autumnal seasons, and, as usual, the autumnal fruits have been blamed as the cause; but, if ever there was a disease arising out of atmospherical vicissitudes alone, dysentery is that one, and a man can no more be seized with true dysentery from any thing he can possibly eat or drink, than he can be taken with pneumonia, ague, or catarrh.

In some of the northern provinces of Sweden, where I happened to sojourn during one of the hottest summers ever experienced, the dry ground was literally covered with wild strawberries, and

the marshes afterwards filled with the whortle and cranberries ; yet I never even heard of dysentery, though so great was the short-lived heat, that the thermometer was ascertained to have risen as high as 90° Fahrenheit in the shade on two successive days ; and so immoderate the desire of the inhabitants for acid fruits, to counteract the effect of their scorbutic winter diet, when no vegetables could be found, that they sought for and devoured with avidity even the berries of the mountain ash, as well as every other production of that kind.

Like fever, it has been termed an endemical disease, but, properly speaking, it is as little so as possible ; and the marshy alluvial lands of hot countries, so prolific of malarious fevers, are no further productive of dysentery than as they may furnish, in a greater degree, the chilling night vapours which are its immediate exciting cause. The cold, however, is the agent here, and not the miasma ; for the same night chill will just as surely induce it on the deck of a ship navigating the tropical seas, or on the driest sands of Egypt, as in the most swampy quarters of the West Indies.

I am far from attempting to deny that the abuse of even the wholesome fruits will occasion diarrhœa, and that bowels weakened by previous disease may not become more liable than they would otherwise be, to fall under the influence of any epidemic that is peculiar to them ; but diarrhœa is not dysentery ; so far from it, that when, in treating dysentery, we can induce diarrhœa (that is, bilious and feculent evacuations, through the effect of our purgative or mercurial remedies), we have, in fact, cured the disease, or at least gained a most important step towards its cure.

I believe, therefore, that the free, but not immoderate, use of fruits, by assisting to keep the bowels soluble, is at all times a preservative against dysentery ; and that, when the disease is present, the same use is not only harmless, but, as in the case of the dysentery in Trinidad, may furnish a most important remedy towards the cure. For if we examine the dismal records of this scourge to our fleets and armies, we shall find that its worst ravages have been seen amongst the famished garrisons of besieged towns, or in ships remote from land, while navigating the tropical

seas, or in barren encampments, where fruits could not be found. But so strong is the bias for tracing our diseases to any supposed source that may be obvious and familiar, instead of seeking for the more remote and occult but true cause, that every attack of illness is attributed to some adjunct or concomitant circumstance of little importance ; more especially to errors in diet, and catching cold. Thus the starving troops, in such places where they could neither procure fruits nor wine to lay the blame upon, have always detected some noxious quality (for it must be from something they have swallowed) in the water of their wells, which gave them fevers or dysenteries, as the case might be ; but if the very worst water, in every sense of the word, could bring on these diseases, our marine population, instead of being the healthiest body in the world, ought to be annually annihilated by them, for they drink none but putrid water, and insist that the very best of that kind is the water of the Thames taken at London Bridge. What, besides, would become of the inhabitants of London itself, who live in the healthiest capital, and drink the dirtiest water in the world, and that, too, with apparent impunity ? No one can doubt that water, impregnated with deleterious ingredients, must engender chronic glandular endemic diseases, or that diarrhœa, worms, and other derangements of the intestinal canal, must ensue from alluvial contaminations of this necessary of life ; but dysenteries or fevers never. Famine, and not fruit, was the predisposing cause of the dreadful dysentery that several years ago devastated the Irish poor in Dublin, for, in their starving state, fruit, even if it abounded, was a luxury they could not procure.

For the peculiar inflammation which dysentery sets up in the mucous linings of the intestines, there has been no remedy yet discovered at all comparable to mercury (calomel). Many medicines, such as ipecacuan, neutral salts, rhubarb, &c. will mitigate or cure the symptoms, but none so effectually, and speedily, and certainly, as the operation of mercury. The specific inflammations, such as the iritic, the hepatic, the pneumonic, the syphilitic, &c. fall before its peculiar superseding stimulus. The habitual use of the medicine is not fitted to all constitutions, and has often been abused ; but the discovery of its power to supersede inflammation

should be considered as one of the happiest in our uncertain art, and treasured as one of the best truths our profession has derived from military medicine. It cannot be denied that dysentery often runs itself out, and that the ignorant are the greatest curers of the disease : in their own estimation, they always rank with the infallible. When the patient lives, they attribute all to their treatment ; and when he dies, self-partiality (the *amour propre*) is ever ready to conjure up an infinity of fiction : why, it could not be otherwise.

Such delusions are far from being uncommon. When, after the convention of Cintra, in the year 1808, the main body of the army proceeded into Spain, taking with them the greater portion of the medical staff, I was left at Lisbon with the sick of every description, and amongst them dysentery was by far the most formidable disease. We soon found that our numbers were inadequate to the care of so many sick, and it became matter of necessity to seek aid from the medical faculty of the place. Amongst these there was an English practitioner, who piqued himself much on his successful treatment of dysentery. He declared that he had never lost a case—it was impossible that he could. He said it, and the people believed it ; in which words are comprehended the sum and substance, the art and mystery, of all quackery whatever. His fame at last reached the ears of the General in command, and an order was given for taking him into employment. A week, however, had scarcely elapsed, when we were struck with astonishment at the dismal mortality amongst his dysenteric patients ; and with a list of the recently dead in my hands, I proceeded to inquire how the first of these had come to die of dysentery. He replied, that he had never lost a patient in that disease in his life ; he had died of bilious fever. The next had died of typhus fever. A third, whose life was closed in hiccup, was a clear case of *gastro-enterite* ; and a fourth, who had died comatose, from being over-dosed with opium, was still more clearly one of determination to the brain. In short, I found that if I went on, I should soon be forced to the general conclusion, of their all having died from want of breath. I therefore contented myself with directing that he should be employed upon

other duties of the hospital, for which, being a good man, setting aside his monomania, he was by no means unfit, but never have the charge of dysenteric sick again, in which disease he was the worst practitioner I ever saw ; opium, under some of its modifications, being his Catholicon. He died about two years afterwards in our service, steadfast in the belief of his infallibility in the cure of dysentery.

Another practitioner was engaged at the same time, through the same influence, because he had been acting physician to the British factory in Lisbon for a course of years, and during all that time had never lost a patient : in his own language, for he had been a French emigrant, *pas un individu*. The different success, however, that attended his civil and his military practice was nearly as remarkable as has just been related of the curer of dysentery.

OPHTHALMIA.

THIS distemper in the army ought properly to be designated as the ophthalmic conspiracy ; for such a disease as our troops exhibited never yet was found in true nosology. It was long denominated and dreaded as the ophthalmic pestilence—a fearful contagion : now we know that there is nothing contagious or pestilential belonging to it, and that, as a contagion, it never had any existence. This requires some explanation. The terms of enlistment in our army for unlimited service ; the then cruel punishment of all-prevailing flogging ; the unvarying monotony of drills and parades ; the unnecessary restriction of furloughs, and the *tædium vitæ* engendered in barrack life, where amusement was never cultivated, and pleasurable recreation, except in the barrack canteen, all but interdicted, had long rendered our service most odious to the British population. The soldier, in fact, was often weary of his life, and drunkenness and crime became his chief, his only resources. The recruit often tried escape from these miseries by inflicting upon himself spurious ulcers of the legs ; but it was a trick most commonly of the recruit alone. The older soldiers knew better, and the troops generally became aware of, and laughed at it.

It was under these circumstances that the army proceeded upon the far-famed expedition to Egypt in the year 1800, where ophthalmia, whether proceeding from a fine impalpable sand ever floating in the atmosphere, or other causes, it matters not, was found to be an endemic disease of the country, and this, it would appear, led to new speculation amongst the bondsmen of military service, which was soon fostered into full activity by the high bounties then offered to induce men to enter the service, and by the system of retirement pensions afterwards promulgated.

Incurable blindness amongst the natives was everywhere to be

seen in Egypt, yet few of our troops, though many had suffered ophthalmia, returned from that land so blinded. It was not till several years after they had left it, that the Egyptian ophthalmia, as it was called, suddenly broke out, spreading terror and consternation in every military quarter where it appeared ; and no wonder, for men would mount guard in perfect health to be relieved very soon after, complaining that their eyes felt as if full of sand and gravel, which would next day go on to the utter destruction of the organ of sight : all this, too, spreading epidemically. The invasion was of so fearful a nature, and its effects so formidable, that men's minds were at first carried away by the terrible nature of the calamity, and it did not at first occur to any of us to inquire why this plague from Egypt had remained so long in abeyance, where it generally blinded the natives, only as a chronic disease of slow progress, and with their very defective means of cure, without ever having been suspected to possess any infectious or contagious quality—or why it was restricted to marching regiments alone—why it did not affect the English militia regiments inhabiting the same barracks, or the population of the neighbouring country—why, if so fearfully contagious, it did not attack the officers as well as the men—and why, above all, the medical staff of the infected regiments, continually engaged in the most intense examination of the eyes of their infected patients, should generally escape the disease, for, according to all the laws of contagion, there ought scarcely to have been an effective eye left amongst them.

When time had been given for men to reflect, these considerations at length had their due weight, and discoveries were soon made that the whole was a deep-laid conspiracy amongst the men for the purpose of procuring pensions, or at least discharges preparatory to enlisting again for fresh bounty, and to be saved from the dangers and severities of foreign service. It was the respectable calculating soldier or non-commissioned officer that speculated upon a pension ; it was the reckless impostor who, whenever he durst, made desertion a trade, that looked forward to fresh bribes in the way of bounty-money. For these purposes, they had been taught to carry the sublimate of mercury in the inner cuffs or skirt ornaments of their coats, for the purpose of inducing purulent oph-

thalmia, or, where that article could not be had, to keep applying other noxious ingredients, such as the mortar of the walls where they lay, mixed with urine, and many others. The conspiracy was so well laid that the men possessed recipes for inducing temporary blindness, and others for being cured, as they believed, after they had obtained their discharges. Some of the most respectable non-commissioned officers were implicated in it. Children were occasionally blinded as proofs of the contagious influence, and women either offered themselves, or were made accomplices or victims of the deception. Some regiments had decreed amongst themselves that they would always be contagious, and never go upon foreign service, and relays of the diseased were always to be kept up in proof. Such was the conspiracy. I was, I believe, one of the first, after having been long completely deluded, to denounce it in a letter, dated 1810, to Sir D. Dundas, the then commander-in-chief; and in the Peninsula and the West Indies, or wherever the ophthalmia appeared, I held myself ready, and, from my station, took effectual steps to unmask the imposture.

In the Peninsula, however, it never prevailed to any extent. In the first campaign some regiments fresh from Ireland tried it, but they speedily found it would not do. The early victories of Rolicca and Vimeira had elevated the minds of the soldiers, and whatever possessed even the semblance of shyness to meet the enemy, was held amongst themselves to be infamous. This was an effectual safe-guard, for whenever public opinion can be brought to bear upon crime, it will infallibly disappear, or at least vanish into the lowest haunts of infamy and degradation, and, amongst British soldiers, nothing so utterly degrades a man as deficiency of manliness and courage when near the enemy.

Let us now examine whether there be such a disease as contagious ophthalmia proceeding from one eye to that of another person, through the medium and contact of the atmosphere: that of an inoculable ophthalmia, from the actual imposition of the matter of the disease, is not now the question. Every one, I suppose, has witnessed an epidemic ophthalmia, proceeding from atmospherical blights and vicissitudes of temperature, under high piercing winds, to which troops or the labouring population may

be exposed.* All, too, must have seen the dreadful purulent ophthalmia, going on to disorganize the eyes of new-born infants, or even grown people, under particular circumstances and seasons ; but in both the one and the other it is uniformly a sporadic disease ; and even he who finds contagion in every thing, must be puzzled to find it in the one above mentioned. There is one truly inoculable ophthalmia—the gonorrhœal ; but the purulent ophthalmia of the army could not be so classed, for medical officers (*vide* Edinburgh Medical and Surgical Journal) inserted it into their own eyes with impunity, or bound it upon them for the whole night, when they went to sleep, with the same results. The ophthalmia of the soldiers' children at the Royal Military Asylum, so well described by the late Sir P. M'Gregor, in the Medico-Chirurgical Transactions, was, I think, as likely to be a gonorrhœal ophthalmia as any thing else ; and when we consider that the children were then in the hands of the women of the army, who were at the very time accomplices in the conspiracy of their husbands, the idea gathers strength. That the ophthalmia of the men was not the gonorrhœal I soon had full proof, from the following circumstance, which, in itself, first served to open my own eyes to the true character of the disease, and inspired doubts in regard to its contagion. A blinded soldier at one of our hospital stations in the Kent district, where I had the superintendence, was holding his baby on his knee, and I saw the matter from his eyes drop fully and repeatedly upon the infant's face, which had always been, and continued to be in perfect health. His wife, too, who had all the while been lying in the same bed, and using the same pillow, was perfectly untouched by the ophthalmia.

However the disease may have been generated, or whether contagious or not, a discovery was ultimately made in the treatment, which at all future times must ever be precious in ophthalmic surgery. On the first alarm of the new ophthalmic

* I witnessed a remarkable instance of this when I was surgeon of the 5th Regiment, at Norman Cross Barracks, in the cold spring of 1799, when the men, mostly recruits, on being severely drilled during some high easterly winds, were very generally affected with what I believe is now called rheumatic ophthalmia.

pestilence, it was attacked with all the appliances of antiphlogistic medicine, under their most active forms ; and, in as far as our knowledge then went, they appeared to be most necessary, for sight was sometimes irretrievably lost, and the coats of the eye ruptured from suppuration, in the space of a very few hours from the first invasion. The practice of venesection—the first and most obvious resource—although carried to a length far exceeding any thing ever attempted before, was far from being successful, and the number of incurably blind proclaimed its inefficacy. The stimulating plan, as described by Dr. O'Halloran in his work upon Purulent Ophthalmia, was made to supersede the antiphlogistic, and the effect was successful in at least a fourfold degree.* The experiment is most valuable, in proving that whether in constitutional or surgical diseases a new principle of cure has been

* The Brunonian doctrines of superseding all diseases by appropriate stimuli are true in themselves. The difficulty lies in discovering what are appropriate, for a scurvy constitution is a constitution *per se*, and has laws of its own. The patient may be lost or killed in the experiment before we can ascertain how he ought to be treated, and the *via tuta* of allopathic medicine becomes the only justifiable course until experience can point out a better road. Hahnemann's *similia similibus* is but a weak burlesque of the Brunonian principle. Brown went boldly to work with his wine and brandy, and committed havoc like a man of business. Hahnemann, I cannot but think, must have been long hung in his sleeve, for to treat of his minimo-infinitesimal doses without laughter exceeds all power of face ; verily he must have been a wag, but his waggery is too severe, for it goes to proclaim physic a farce *in toto*, and homœopathy the last act of the performance. Brown, it must be owned, stands on stronger and better ground, for who has not seen turpentine supersede the best-established inflammations, and arrest the most acute hæmorrhages, or black pepper (Ward's paste) do the same in the most violent attacks of hæmorrhoids ? Mercury, too, the most general and undoubted of all stimulants, goes to supplant, by its own peculiar action, almost all constitutional inflammations ; and the lunar caustic, as in the case before us, will act like a charm in curing ophthalmia, gonorrhœa, and almost every topical inflammation to which it can be applied. It is, in fact, the sedative *par excellence* in all inflammatory irritations. It may, however, be carried too far, and could Hahnemann ever have heard of the heroic practice described in another part of this work as being so common within the Tropics,—and indeed we may add sometimes amongst ourselves,—we might give him credit for having written in ridicule of the calomelanists, did not the exquisite absurdity of his billionth, trillionth, and decillionth infinitesimals so far transcend all ordinary concoction. Granting, however, that he was serious, he certainly has succeeded in carrying the joke further than any satirist of modern times.

disclosed, which may hereafter lead to most important results in the treatment. The details of the ophthalmic conspiracy have never yet been published to the world. It would have been too dangerous at that time to promulgate them; but the proofs that could not be concealed ought to have read a lesson to our military authorities, which would long since have done away with the cruel conditions of services for life, and other severities of the common soldier's lot.

Wherever cruelty or injustice have been attempted in any shape, they have in the long run uniformly recoiled upon the inflictors; and happy is it even for the inflictors themselves that such should be the case, for they would otherwise be led on to the most frightful enormities.

We have seen that British soldiers did not fear even to blind themselves for the purpose of insuring their escape; and the same causes have led to similar conspiracies in the Russian, the French, the Belgic, and Dutch services; but these never extended to the same deep-laid guilt as with us, for the soldiers of the Continent had a resource and charter in their institutions of limited service, to which they always looked for protection and deliverance. Their conspiracies were short-lived, and probably would never have existed, but from their hearing of the temporary success that attended them on our side of the Channel. I cannot tell how evidence of the conspiracy ever was obtained in their armies; but the first discovery, in a military rather than in a medical sense, was said to be made amongst us in the following manner:—A regiment of the highest character (to the best of my recollection the 28th), was much afflicted with the ophthalmia; and upon some occasion of military disorder, the commanding officer took the opportunity, in a touching address, of appealing to the feelings of the men. This had such an effect that a conscience-stricken soldier, after the parade had been dismissed, waited upon his Colonel, and laid open the whole conspiracy. Without this confession and discovery, it might have been difficult ever to have obtained positive evidence of the conspiracy, although the circumstantial and presumptive proofs were in many ways so strong, that its existence could not for a moment be doubted.

I have written thus strongly on this subject through strong conviction; but I shall be ready to read my pallinode (and confess that I have been in error) whenever I see the medical staff lose their sight by the contagion, and the officers affected by it in the same way as the men.

OF SYPHILIS.

FOR obvious reasons this must be a prevalent disease amongst men leading the life of soldiers, and it is an interesting one, as well from the accidents it gives rise to as from its obstinate complicated nature when it appears in a constitutional form. Until our experience in the Peninsular war, there had been but one opinion amongst us of its utter incurability but by mercury, and if, through chance, the disease got well without it, we had as little hesitation in declaring that it could not possibly have been true syphilis, but some other disease putting on that form. In short, there was one specific, which was mercury, and that was to be administered, at all hazards, to all the afflicted, no matter what may have been the patient's capability of bearing the remedy, the nature of his constitution, or the sufferings it entailed. Things were in this state at the beginning of the present century, when, during the year of the peace of Amiens, I was made to accompany the late Duke of Gloucester in a tour to the north of Europe, during which we chanced to arrive at Moscow when a contest was raging there between the pro- and anti-mercurialists of the faculty, for the appointment to a syphilitic hospital that had just been founded by one of the Prince Gallitzins. His Excellency, an enlightened man, was sufficiently inclined to the first, but, before deciding, did me the honour to consult me on the occasion. I need not say to what side I inclined, or how much I wondered at what appeared to me the barbarous ignorance of the people where such a question could have been raised. I set it down, however, as one of the strange things a passing traveller often hears of, but has neither time to investigate nor understand.

Two or three years after this, when I was doing duty in the home district, on my promotion to be Deputy-Inspector of Hos-

pitals, and it became my business to examine the weekly returns of the regiments in England at the Medical Board Office, we were utterly astonished on its being reported that more than one surgeon of the King's German Legion were infected with the same heresy as the non-mercurialists of Moscow! and they promptly met the treatment of heretics. Instant retraction, or expulsion from service, was the alternative.

I certainly never expected to hear more of what appeared to me so strange and pernicious a delusion; but, on my appointment to be Chief of the Medical Department to the Portuguese Auxiliary Army in the Peninsula in the year 1810, I found that the native faculty never used mercury for any primary symptoms, and very little, if any, for secondary ones, and they obstinately contended for the right and propriety of their practice. Such infatuation, as I then thought it, was not to be reasoned with. I applied to the Commander-in-Chief, and obtained the strongest general order that could be penned, ordaining the use of mercury in every stage of syphilitic diseases.

Still I was beat. Wherever I could not personally superintend, the remedy was neglected; if present, the mercury was neutralized with sulphur, and when I insisted upon seeing whether it had been rubbed in, was presented with a skin as black as an Ethiop's. At first their dislike and horror for the remedy was so great that they would rush from the room when it was applied, and wash it off with soap and water. In fact, I saw that I was playing a losing game where I could not help myself, yet at the same time I could not help acknowledging that the grave consequences I apprehended must have ensued from their preposterous conduct, did not follow, and that our soldiers, who were mercurialized I may say to extremity, often suffered them in the most lamentable degree.

Things went on in this way for about two years longer, when I was dispatched to Evora, in the Alentego, to take charge of the medical department, where I found a large hospital, under excellent management—by far the best I had ever seen in Portugal, and there the list of primary cases amounted to nearly fifty, all

of them with severe, extensive, and well-marked syphilitic ulceration, and all doing well, without ever having taken a particle of mercury, which had never been used amongst them in these stages of the disease from time immemorial. I had been, meanwhile, in the constant habit of inquiring amongst, and observing our own soldiers, and when I compared the difference of their condition, full of mercury, with that of the native troops, who never took a particle, I cannot describe the astonishment it raised. Still I could not bring myself to believe that I had lived so long in utter error, and I wrote from the spot the first English essay that had appeared in our times, of the curability of the disease without mercury amongst the Portuguese, for I durst not at first open my eyes to the whole truth; and within two years afterwards, first Mr. Rose, and then Mr. Guthrie, ventured upon bolder views, and published to the world the feasibility, propriety, and safety, of treating British soldiers in the same manner as the Portuguese.

I confess that nothing in the practice of physic ever staggered me more than this discovery: that the creed of ages should be found utterly baseless—that the wisest amongst us should have, in all the intermediate time, been destroying instead of saving their patients, by murderous and unnecessary courses of mercury—was enough to shake the firmest faith in physic, and to prove that what might seem the best established principles of medicine were no more than the delusion of the passing day. Far be it from me now to say, that mercury should be dismissed from practice in these complaints, because it has been proved that they can be cured without it; for it is still the very best remedy that ever has been discovered; but then it should be used in accordance with the rules and safety of the constitution to which it is applied. Eschew salivation in every instance, and throw away the remedy the moment it is found to disagree: do this, and I cannot conceive why, as heretofore, it should not be used in every case of primary and secondary symptoms. To reject it in all (I may say in any), is to reject what has been shown to be by far the best remedy we have ever known, and he who does so is surely as much a bigot, and that too on the wrong side, because it will not

answer in all, and has been shown not to be indispensable in any, as he who mercurializes even to the death, amidst the carious bones and fiery irritable ulcers that the mercury itself has created.

Were I now to make a scale of the applicability of mercury, I would say that the tithe of what used formerly to be administered is the proper initiatory quantity in any case, until it can be ascertained whether it will suit the patient's constitution or not : that, again, a tithe of that tithe, or a centime, is about the allowable preliminary dose in secondary symptoms ; for wonderful to say, that these, which were once believed to be ineradicable in less than a lifetime of mercury, are now found to be cured with far greater facility than primary symptoms ; and it was this stumbling-block we ourselves had set up, which misled the philosophic Abernethy. He, believing in the incurability without mercury, was utterly confounded when he saw some of the worst cases yield as if by magic to some of the simplest mercurial alteratives, which he had administered as preliminary to the established course. He inquired amongst the best surgeons of his own school, who assured him that the cases could not be syphilitic. To be sure, they looked like it ; but as they got well in the way they did, they must be something else, and he therefore wrote his work on Pseudo-Syphilis. A stronger instance of the tenacity of the human mind in adherence to error, never was exhibited. He was a philosopher, but he could not forego the prejudices that had been instilled into his mind in early life ; and rather than open his eyes to the truth, he chose to invent an imaginary order of diseases, which, had he allowed to be real, must have held up a mirror to his view, which he could not have looked into without owning that he had all his life been destroying in many instances, instead of curing his patients. So strongly and well-established was the delusion, that even warts on the genitals were pronounced to be a sure indication of syphilis, requiring a full course of mercury in a six weeks' salivation ; and buboe, a pure accident of the stimulating treatment, or the scrofulous constitution, to which mercury is so inimical, was attacked with all its forces, until, what with the mineral, scrofula, or phagedæna, the victims were sent

to the grave, or delivered over to the miseries of a ruined constitution for life.* Amidst all this blundering and prejudice, it seems never to have been discovered that mercury was, after all, making its own work, by producing the very appearances of ulceration it was given to eradicate ; for so like are the abrasions of the mouth and throat, or other secreting surfaces, resulting from mercury and from syphilis, that the best experienced cannot even now distinguish between them ; and in former times went on destroying in the dark, always believing, while their patients were falling before their eyes, that their practice was orthodox and indisputable.

I shall not here enter into the mooted question of a plurality of syphilitic poisons. That gonorrhœa and syphilis are two distinct diseases, has been proved from the earliest records of time. In the sacred volume the great legislator of the Jews describes the first as clearly as any modern writer of our own time, without the smallest allusion to syphilis, of which he evidently knew nothing. It was, however, known to others ; for Herodotus, who lived so long before the Christian era, in the 105th Section of the book of Clio, describes it as having affected the Scythians, in judgment for their having plundered the temple of the celestial Venus ; and the prophet Samuel describes it under the name of emerods, as having been sent by divine wrath upon the Philistines, those inveterate enemies of the Israelitish race. How it came to disappear in what may be called the intermediate ages, remains a puzzle ; for had it been known in the great cities of antiquity, such as Rome and Jerusalem, when, in the first more especially, demoralization must have reached its acme, and its known causes must have existed in their fullest force, it could not have failed to attract the keenest lash of the satirist, and the denunciations of the inspired writers. The Royal Psalmist, indeed, in one of the penitential psalms (the

* I believe it has never yet been proved that buboe, whether proceeding from chancre or gonorrhœa, is any thing else but an irritation, or that the matter contained in it is capable of producing infection, which it must have been had it been caused by absorption alone ; for the matter of pestilential buboe is, I believe, as sure an inoculator of plague as that of variola is of small-pox.

38th), describes something very like it; but the figurative language of the poet, prostrating himself before the offended Deity in contrition and repentance, ought to be viewed as the outpourings of a deeply-troubled spirit, deprecating the divine wrath, rather than the definition of a disease, which, with the above exception, is altogether unnoticed in any other part of the sacred volume. How the last originated is a question of even more difficult solution.

That Columbus should have brought it from the innocent natives of the Carribbee Islands, is a fable too weak to be credited. The first devastations may have been contemporaneous with his return from the West Indies; but he found it in the stews of Madrid, or the sea-ports, amidst the unspeakable abominations of common prostitution, in the same way as at an after period the troops, under the miseries and privations of the siege of Naples, where the few women who followed the camp must have been of the most abandoned and revolting description, adopted the belief of its having originated there. In fact, I believe, with my friend Mr. Guthrie, that whenever prostitution is foul and unclean, restricted to few women amidst crowds of men, there the infection will be generated, which afterwards spreads through society at large. The irregularities of man are at all times punished by the generation of diseases, and the loss of the health; and it would be difficult to believe in a superintending providence, if this transgression of divine and human law, as well as foul abuse of the sources of life, should be allowed to pass unvisited by similar punishment. I shall conclude this part of my subject with stating the incontrovertible fact, that the British army at this moment contains thousands in perfect health, and has contained many thousands more, who have been perfectly cured of every stage and state of syphilitic diseases, without ever having taken a particle of mercury, although, amidst the infinite variety of idiosyncrasies which the human race presents, there can be no doubt that particular cases have occurred, and always will occur, in which the use of that remedy has been, and will be, found absolutely necessary.

The error lay in the abuse, not in the use of the mineral, and which, it is to be hoped, will in future be avoided.

The foregoing is but a fragment, intended to fill up a gap in the systematic treatment and history of syphilitic diseases. Let it be taken for what it is—a military sketch of a period when a discovery of much importance in regard to the treatment was made, and a mighty error was exposed and corrected.

The steps that led to this important discovery may, before concluding, still be worthy of some further remarks. When the British army landed in Portugal, the soldiers were all of the native breed and habits—sanguineous, plethoric, highly fed for soldiers, and addicted as they had ever been to the abuse of alcoholic stimuli. The climate at the autumnal season of the year was hot, and the campaign, before reaching the capital, had been active. Under these circumstances, intercourse with the common women of the country produced the usual consequences of syphilitic disease, for which at that time we knew of but one remedy—*intus et in cute, ab ovo usque ad mala*, and afterwards, so long as the patient remained above ground—no matter what mutilation and exfoliations he might have suffered—mercury was the sole panacea. With such subjects, more especially at the beginning of the disease, before being lowered and depleted, it might have been foreseen that phagedæna would assume the reins while mercury gave the spur. Our hospitals every where exhibited instances of the most melancholy mutilations; and even amongst the officers these were occasionally seen. The Portuguese meanwhile regarded our practice with horror and astonishment. With them the disease was ordinarily of chronic and mild character. It was a misfortune of which they thought no more shame than they would of scrofula or cancer, and they sought no concealment. All this led to my first publication, in the Medico-Chirurgical Transactions. Mercury in excess, and long-continued, had even led to exfoliation of the facial bones; and for these exfoliations we gave more mercury. Need we then wonder at the number of victims, as we then thought of the disease, but in fact of the

remedy? The Portuguese, I may almost say, had no phagedæna. I cannot call to mind a single instance similar to ours, with the exception of a camp-follower on the establishment of a staff-officer; but he was as highly fed, a drinker, and sanguineous, as any of his English fellow-servants.

ON PLAGUE AND QUARANTINE.*

HOWEVER unphilosophical it may be deemed, there appears to me good reason for believing, that diseases which in their origin are beyond all doubt non-contagious, may temporarily acquire that property from generating a contagious atmosphere amid multitudes of the sick, and high concentration of what was the original cause during the progress of an epidemic. The form of fever denominated plague is unquestionably a disease of climate and season endemial of the land of Egypt and the Upper Levant. Its contagion has of late been much disputed, and it must remain a mooted question, until the great plagues of London, of Marseilles, of Moscow, and many others, both in ancient and modern times, can be better explained than they have hitherto been. Let us confine ourselves to the later eras, as being better within the scope of our investigation; and, taking the comparatively recent one at Marseilles into consideration, it would appear, from the *Quarterly Review*, that the ship which was supposed to import it there underwent a regular quarantine of twenty days, when no disease appearing amongst her people, she was allowed to land her passengers and goods. To make, however, an accurate investigation of the facts of the case, amidst all the prejudices and panic that it has ever since excited, would now be impossible, and I shall not therefore attempt it. Luckily, the still more recent case of the plague at Malta and the Ionian Islands presents itself under more favourable circumstances for investigation than we ever before enjoyed, and to that let us now direct our attention. Its introduction there from Egypt in the year 1813 may be accounted for from similarity of soil and climate, either giving origin to the disease in certain peculiar seasons and localities, or affording ready receptacles to the contagion when once introduced. The San

* From the *Edinburgh Medical and Surgical Journal*, No. 154.

Nicolo (the guilty vessel), not attempting to conceal what had occurred on the passage from Alexandria,* gave herself up at once to the quarantine authorities at the lazaretto. Every possible precaution was used; yet, notwithstanding, did the plague spread amongst the inhabitants, the same as if the importer had been a common merchant ship unsuspected and freely communicating with the shore. True it is, that, while this was going on, there were ominous signs of an epidemic constitution of the air at Malta. Glandular suppurations were taking place from the slightest irritations at the extremities of the nerves on the surface of the body, and all manner of wounds and ulcers exhibited an unkindly aspect. It may be quite true that the plague had not been seen at Malta for 137 years previously; but that only goes to prove that it had not been introduced when the aforesaid constitution of the atmosphere chanced to prevail, without which it must have been extinguished through the excellent precautions that were adopted, and could not have spread in the way that it did. But now we come to grapple more nearly with the question—of what use can quarantine possibly be under such circumstances? Did it save the people, and can it save them should the same occur again? These questions are answered by the facts of the case;—they were victimised. But Malta, being a part of our own dominions, and affording a more intimate knowledge and better acquaintance with the disease in question than we ever before possessed, her case demands more accurate investigation.

In the year 1813, that island with its warlike garrison, then the best appointed military government in the world, was armed to the very teeth against the importation of plague;—all the arms were brought to bear, and all had fair play. The importing ship, while her crew, then healthy,† were locked up in the strictest quarantine, was promptly remanded to Alexandria without farther disease being communicated in any way to the fresh crew (stated to be a

* Two men died on the passage, said to be of the plague, and the fact has never been denied.

† The captain of the ship certainly died suddenly after being placed in quarantine; but it never has been asserted, even by the strongest partisan writers, that his disease was the plague.

full one) who navigated her back, and afterwards unloaded her in that port. The season of epidemic plague had, it would appear, passed away there in the interval, and therefore they were safe even in their own infected ship. In Malta, the climate being different, as wanting at that season of the year the high temperature necessary for the dissipation of plague, or the low for its extinction, the disease did not altogether disappear till the commencement of the winter season. The native inhabitants were the principal sufferers, being weakly and ill fed, compared with the British military population, and, as we see amongst our own people at home in the case of typhus fever, wherever the constitutional stamina are naturally feeble, or have been deteriorated through any cause, the disease will there, in preference, take its hold. I am not denying contagion, but that contagion must have been aided by a favouring condition of atmosphere, without which it never could have left the well-guarded lazaretto with its triple wall, but have gone out, as it did at Alexandria, for the reason above mentioned. It was, however, brought ashore; how, we cannot tell, and spread itself amongst the inhabitants generally. The quarantine staff declared it must have happened through some undiscovered, and, under the circumstances of Malta, we may add, undiscoverable breach of quarantine. Dr. Calvert, Physician to the Forces, who was then on the staff at Malta, and who wrote a most excellent account of its plague in the sixth volume of the *Medico-Chirurgical Transactions*, tells a different story. "I observed," he says, "during my residence, that every whitlow festered, and every scratch became an ugly sore, although many of these were accompanied with little or no fever; a tight shoe was sufficient to produce a livid boil with symptomatic bubo. Many cases of this nature occurred in respectable individuals and staff-officers, while the military hospitals were crowded with them." Then he gives a nominal list of no fewer than 27 of these glandular cases that occurred in the 14th regiment alone, between the 20th of June and the 22d of October, every one of whom, it may fairly be presumed, was pestilentially affected, but, being without fever, short of the degree that made it contagious. This has frequently been seen in plague countries, where personal attendants

have often been found with similar buboes without communicating any infection to those they waited upon.

These, one might suppose, would have thrown some light on the subject of the pestilential contagion amongst the inhabitants subject to all the privations of quarantine ; but that would not have satisfied its officials. The following story was therefore got up for the edification of the sufferers. “ About this time a woman at Nasciar, where the plague had not existed for three months, was attacked in the following manner. She was brought to bed in the beginning of December, but, before she had time to recover from her indisposition, her husband compelled her to get up and wash his pantaloons. Being fatigued with the exertion, she drank a good deal of wine ; this was soon followed by flooding, and that, which suddenly ceased, by a violent fever, attended by a bubo in the groin ; and she expired on the following day. In this instance the infection was accounted for in the following manner. A noted smuggler, who had been kept a long time in observation, and afterwards liberated in consequence of no marks of disease appearing upon him, had been drinking a short time before the accident with this woman’s husband, when it was supposed he came in contact with the identical pantaloons the woman had washed.”

Here we are seriously asked to believe that the poor woman’s childbed, from which she was forced to get up and employ herself in washing, the subsequent flooding, and its sudden suppression through drinking a quantity of wine, were all, under the aforesaid circumstances of the case, to go for nothing ; and that her husband, himself healthy all the while, brought her the plague from going to drink with another healthy man, suspected of being a smuggler, with whom, it is supposed, he might have rubbed pantaloons. Was ever such a story before attempted to be imposed upon full-grown men with beards upon their chins ? It would scarcely have passed current in a monkish legend of the last century, and by all men whose reason had not been obscured by panic or prejudice, would be rejected as utterly childish. Taking the state of the military hospitals into consideration, would it not have been better to have candidly admitted that a contagious plague atmosphere, how generated we could not tell, had fallen on Malta, than to have

resorted to such puerile fiction, as Dr Calvert has described? As if this was not sufficient to prove infection from communication, it was given out that the shoemaker, Salvator Borg, one of the earliest sufferers (I still quote from Dr Calvert) had purchased some new linen to line shoes with, from a Jew, which linen had been brought from Alexandria; but the Jew had always been in perfect health, and the linen in question had undergone the full process of quarantine and purification at Zante. Dr. Hancock quotes another case from Tully's account of the plague at Malta and the Ionian Isles, where an old woman, who had received some pieces of money wrapt up in a bit of calico, for the purpose of being thrown across a stream of water, was not taken with plague herself, but some time after communicated the disease, which she never had, to her daughter, &c. Surely after these I need not go on with stories of "imaginary thefts and contraband transactions," of the smuggler's mission under cover of the night, to bring the pestilence in some box or bale from the infected ship, despite of all the guards that surrounded her; but these are answered at once, allowing the smugglers to have gone on such an expedition, by the fact, that boxes and bales of that kind have been opened out in countless thousands at the lazarettoes of Britain for almost a couple of centuries, and are being so opened now, without ever communicating plague in a single instance, even to those employed in opening them. One wonders that the washerwoman has never been employed to bring the plague ashore instead of the smuggler. The latter has no business with the fouled linen and infected bedding of the deceased. For obvious reasons, they would not serve his purpose; his prize is the compact portable handy package, which, as we shall presently see, can never convey infection; the more bulky ones, such as the above, that might prove contagious, would betray his errand, and these, I need scarcely say, he never touches.

In various publications upon the plague of Malta, we are asked to believe that actual contact was so essential to the propagation of the disease, that military hospitals were formed in the upper stories of a building, while the lower were the abodes of most

concentrated fatal plague, without ever infecting the former ;* that in villages, and portions of villages, where it was necessary to form cordons of troops, the men would be placed within a few feet of the infected quarters, and contract no illness, although living for weeks continuously on that duty. “Credat Judæus, non ego,” I say emphatically. That they held no communication by contact under such circumstances is absolutely incredible. The prowling prostitute would throw herself in the way of the soldier under cover of the night, and the starving female of a better class, under the cruel privations of quarantine, would seek the wages of prostitution. No supposable enforcement of discipline could prevent this. Soldiers are but men ; in regard to their health the most reckless of men ; and we all know the Latin adage,—*Naturam expellas furca, &c.* What then saved them ? The British rations ; their European stamina ; regulated cleanliness ; and general discipline. These availed to save the French army in the very land of plague, while on its march into Syria it was quartered in the infected villages of Egypt, in the way that troops on a march without tents always quarter themselves ; that is, turning the inhabitants out of their beds and houses, without ever contracting plague in an epidemic form. When stationed in the vicinity of marshes the plague actually assumed an intermittent form, which was always left behind when the troops marched away. The English army, at the very plague season of the year, never knew it but as a sporadic disease ; and although the Indian native force that joined from Bombay suffered somewhat more, that was to have been expected from the description of troops living upon vegetable diet, and refusing animal food. I am not pretending to deny the contagion of plague under certain circumstances of temperature and season, without which it is nothing, for its disappearance at the summer solstice in Egypt can be calculated upon almost to a certainty. The malaria that produces it must be peculiar to the soil of Egypt, for there it is indigenous. Other Mahometan countries have occasionally a long respite. In Egypt it is as much an en-

* Vide Hennen and others.

demic as the yellow fever is in the West Indies, and has been so from the earliest records that we know of. Why a malarious disease should be transportable and contagious I cannot tell ; and if the fact be so, it would be vain to speculate upon the reasons. Other diseases that in themselves have no contagion belonging to them may acquire that quality temporarily from the accumulation of crowded sick ; and where there is contagion, the fomites of the sick may retain it for an indefinite length of time. The miserable fellahs of Egypt, and the lazzaroni of Mahometan countries, to whom changes of body covering are little known, may thus retain the infection about their persons and dwellings, until the season for fresh explosions returns, and in this way it may be made perennial.*

Much has been written and believed upon the security derived from what is called shutting up, by Europeans ; but the exposure of the closest cordons with impunity, as at Malta, shows that this security resides in the European constitution, and not in the avoidance of contact. Even the most rigorously secluded, however, at times fall victims, and when the contagionist is at his wit's end to prove communication, he falls back upon the cat, (*vide* Assalini and others,) or other domestic animals. She, to be sure, is a wanderer within her own circle, but she shuns strange places, and her nocturnal assignations are conducted upon our house-tops and other out-door premises. Why the rat should not also have been suspected seems strange ; for he is a bold intruder, often coming from afar, as I have often found to my no small disquiet, to thrust his nose where he has no business ; and the cat in her vocation pursuing the rat, may thus gratify the disciple of actual contact with a double allowance of what he prizes so highly. It surely would

* The plague of Egypt, however, is an affair of season altogether. When the time arrives, were we even to woo its stay we could not retard its departure a single hour. It is then that the fugitives of the pestilence return to their dwellings. The beds from which the infected have just risen, or been carried, are occupied without purification and without risk, and the personal clothing of the dead is in the same way transferred to the living, without ever affecting their health. Saint John's day is past, and there can be no fear ; nor will it do to say that those who have thus escaped were insusceptible of the infection-contagion proof, for when the plague at its proper season returns with the succeeding year, they have often been found its first victims.

have been more in accordance with the rules of evidence to denounce the flies and winged insects that inhabit the atmosphere, than a useful domestic quadruped. These constitute aerial intercommunication between man and man, and may act a part in the transmission of contagions, of which as yet we know but little, but they can neither be destroyed nor quarantined, and as they would answer no one's purpose, have always passed unnoticed.

The manlike and vigorous mind of Sir Thomas Maitland, who then commanded at Malta, was so imbued with the delusion of actual contact being the sole means of propagating the disease, that in a dispatch dated April 1819, which he subsequently addressed to Lord Bathurst, he justifies his having resorted to measures of quarantine at the cost of such sufferings as he thus so forcibly describes. "For there is no denying," he says, "that the treatment of plague under the ancient system is one attended with a degree of cruelty and tyranny unparalleled in the annals of the world, and only to be defended on the principle of positive and ascertained necessity. This system cuts up by the roots all those feelings of domestic life which are peculiarly endeared to the mind of a man in a moment of sickness and distress; rends asunder the bonds of society, and places the unfortunate patient in a situation of the most desolate isolation at the moment when the only remaining comfort of life exists in the kindness of natural friends and connections. The quarantine law, too, in the instance of the plague actually existing, is not only most arbitrary in itself, but to the full as indefinite as it is arbitrary, and the whole of the circumstances attached to it are so revolting to the feelings of every man, looked at in any way, that I apprehend that this is one of the principal reasons why, in almost every instance that can be mentioned, this fatal malady is allowed to arrive at a great height before it is even declared to be plague; and in the two great instances of the plague at Messina and Marseilles, we accordingly find that no reliance was placed on its being the plague till it got to that dreadful head that occasioned those miserable scenes which afterwards ensued. The same was considerably the case at Malta at the breaking out of the plague, and it cannot be astonishing to any man who has seen it, that even the last dregs of hope must

expire before any society can submit patiently to a system of discipline which can be stated at best as only an inferior evil to the plague itself. The quarantine laws under the same system, with the view to prevent the introduction of plague, are attended in all instances with evils of great magnitude, and most of all in the very serious effects it universally has upon *the commercial relations of different countries*. It would be most fortunate, indeed, if it could be made out that the world had been hitherto mistaken with regard to its character and origin." And I verily believe that the world has been in many respects greatly mistaken. The experience of the French and English armies in Egypt decidedly proves a negative of actual contact being either the sole originator or indispensable propagator of the disease, for the closest contact did not give it to the first, and the escape of the military at Malta, while in such near approximation as has been described, goes to show that the non-contact, so much relied upon, must have been in great part a fiction of the self-deluding mind. It did not, it could not, exist for so many months, under the circumstances of Malta, without the cordons being infected. *Quis custodiet custodes ipsos*, is a fair question, and that they did not on their return to their regiments spread the infection among their comrades in a marked degree, ought to be sufficient answer to those who insist the disease can never be propagated but from personal communication. Always avoid unnecessary personal communication as much as possible. It would be unwarrantable to act otherwise; but when we see the disease spread as at Malta, despite of seclusion and cordons, and quarantines, yielding to nothing but a change of season, let us spare the additional infliction of the cruel laws so admirably depicted in the above dispatch of Sir Thomas Maitland. These laws have too often caused men to be mercilessly shot on their own thresholds, or hung up before their own doors, to the great exultation of the quarantine authorities; and if done needlessly, in obedience to a baseless superstition, what shall we say to their guilt?

One wonders that the ultra-contagionist does not see how much he damages his own cause by insisting on the indispensableness not only of personal communication, but actual touch. This would

make plague almost like itch, a strictly inoculable disease ; and had this been the case at Malta, it must, with the pains taken, have been put out twenty times over, I may say, in the course of the six months it prevailed there ; but what means in the power of man can extinguish an atmospheric or endemic disease ? In the histories of divers plagues, there are evidences of hundreds, I may say thousands, being infected in one day ; and will any one pretend to say that all these took it from touching one another, or that anything but a contagious atmosphere could have made the infection so diffusible ? This atmospheric contagion exists oftener than the quarantine practitioner is willing to acknowledge. It would destroy his trade, and therefore he has always cried it down. Believe him, and the laws of the atmosphere will ever continue an unread book ;—the qualities of soil uninvestigated,—the course of the winds unnoticed ;—aspect of country—perflation, temperature—are to go for nothing. The moral condition of its inhabitants—their sympathies and tendencies—can be of no account ; all are to be superseded by the one antisocial mandate—keep your distance. There can be no danger while pestilence rages, but in the approach of your fellow man. He alone is the enemy you are to avoid. So does not think and act the despised unlettered Turk ; he will not desert his child, or abandon his parent, when struck with the pestilence ; nor will the wife fly the couch of her dying husband. It has been reserved for enlightened Christians thus to exhibit themselves, bereft of reason through fear ; for if they permitted themselves to read and to think, they would find that the abandonment and excommunication of the sick never yet, in any plague country, influenced the progress of the disease. It lasted just as long, and departed just as certainly, at the proper seasons, whether the victims had been tenderly nursed, as in Constantinople, or inhumanly murdered, as in the great plague of London. Both the French and English armies, while serving in Egypt, took every care of their plague patients, but, notwithstanding all the unavoidable necessary intercourse, they could not at any time force it into an epidemic form, nor prevent its recurrence when the plague season returned with the revolving year, nor retain it, I may almost say, a single day after that season has passed away.

When plague first breaks out in oriental countries, it would appear to infect almost all who approach the sick ; when departing, no one. And does not this proclaim, as plainly as the eternal elements can speak, that the disease resides in them, and that contagion can never be more than an occasional attribute ? for, let the quarantine master rave, and legislate, and torment as he will, he can neither obviate, nor retard, nor turn its course. All will be done for him in obedience to the eternal laws of climate, and season, and soil, over which his assumption of control would almost be impious, were it not ridiculous.

Let us now turn to the terrible plague of Moscow, where it appears that after all separation of the sick from the healthy had been practised, and burning of clothes and moveables had been effected, yet did the disease break out in fury after a cessation of three months, and ceased not until the people had risen in insurrection against all restrictions, and given the freest scope to the disease. Surely it ought, then, according to all the laws of progression, to have infected the whole empire, and through its fomites have implanted the disease *in perpetuo* : but no ! it straightway went out, and has never been heard of since. I am not pretending to deny the existence of contagion in the disease ; I only wish to show the impotence of quarantine, when moral and atmospherical agencies lend their aid to its spread. Keep it out if you can. At Malta it has been shown that you could not ; but divest your precautions of much of the absurdity with which they are clothed, in regard to merchandize of every kind ; for it must be impossible that anything can communicate the disease which has not been long in intimate contact with the bodies of the sick. It must, moreover, be of soft absorbing texture, for no hard substance can ever retain the fomites of contagion, through which alone could it be carried from one place to another ; but even this danger may now be considered as visionary—for amidst the thousands and tens of thousands of vessels that, during the last 150 years, have imported their cargoes into our lazarettoes, there is not a single instance of infection having been communicated to any of the officials. They go through the imposing farce, however, with grave face ; but it is a farce, acted not for the safety of the people,

but for their own benefit. Is it possible any one can believe that articles of wool, cotton, hair, leather, paper, or anything else packed in bales, can communicate infection, while they are feeding their children with the figs of Smyrna, that within few weeks have been gathered, not improbably with pestiferous hands, or have their rooms furnished with carpets straight from the looms of Constantinople? Personal clothing or bedding is different; for if worn throughout the disease, it must have become saturated with the accumulated poison, and if contagion can exist at all, it must, until purified, be there. The rule here differs from that of yellow fever.* In the last it was places—not persons. In the plague it is persons, or their fomites—not merchandize or goods. If we admit contagion at all, we must not permit ourselves to be regardless of its fomites; for these, in the accumulation of a saturated garment, may be carried, I should think, as far, and for as long, as the extravasated matter of small-pox can be made to serve the purpose of an inoculator. These, however, if proper means be used, can be disarmed of their infectious power far more easily than the concentrated matter of small-pox can be deprived of its virus. Their disinfection, as I shall presently show, is easy; but till then, they ought in all good health police to be held dangerous. How else can we account for the revival of small-pox, scarlet-fever, and other contagions after long cessation, but in the unpurified flock and feather-beds of this country, which retain the contagion till susceptible subjects and peculiar seasons call it again into operation? In many parts of the Continent these are subjected to annual purification. Here at home they often remain untouched for as long as they can hold together, no matter what diseased bodies may have lain upon them. Ventilation can never be made to visit, or the light to penetrate their interior. Can we, then, wonder that they should retain, it may be for years, the seeds of infection?

To deny contagion altogether is bigotry as untenable as ever possessed the human mind. The simplest shepherd or drover of cattle knows better. He is well aware that infection can be carried

* Fully discussed in another place.

by the living animal to any distance, and that the safety of his flocks and herds depends upon guarding them against the dangers of communication. But, independent of this, may we not have been deceiving ourselves when we attempted to define the distance to which contagion can extend from the sick-bed? The epidemic spread of plague, small-pox, scarlatina, &c. will otherwise always remain a mystery whenever they have by any change or introduction been called into existence. Until disarmed first by inoculation, and, subsequently, by vaccination, small-pox was by far the most fearful of human contagions; and it now exerts its fury, exactly in proportion to the novelty of its introduction, and the simple lives of savage tribes, amongst whom it had previously been unknown, and to whom it never could have been conveyed but through its fomites. In civilized life the virulence of the contagion is more easily disarmed, and civilized man never suffers from it to the same extent as the Indian or the negro. It was only, as it were, the other day that intelligence reached us of a whole tribe of warlike Indians, on the descent to the shores of the Pacific, having been utterly extirpated by the introduction of this scourge. Alcohol had before that been slowly doing the work of extermination. Small-pox accomplished it at one single blow.

The variolous contagion seems, moreover, to act equally in all climates, seasons, and localities. It will spread, if once introduced, as easily under the equator, as within the bounds of the arctic circle. Unlike the plague, it has no cessation for as long as susceptible subjects can be offered up; and of all diseases it should with the greatest propriety be made the subject of quarantine; but while we keep on enforcing it against the visionary dangers of plague, we cannot, we dare not, apply it to this domestic pestilence ever raging under our very nose. This last can be of little avail in guarding against diseases that are known to be as much atmospheric as they are personal and contagious. To look for security for such a safeguard against them, is to shut our eyes to the true nature of the danger, and lie down in apathy under the false belief. Domestic health, police, and public sanatory precautions, such as those directed under the Drainage Building Bill, recently passed through Parliament, can alone save us from the invasion, or

preserve us in a fitting state to meet the evil when it arrives. There was a time, before the great fire of London, when the plague appeared in our metropolis every twelve or fifteen years. It has not now been seen there for nearly two centuries. At Malta and the Ionian Isles, it may, through vicinity to Egypt and similarity of climate, have shown itself oftener; but in our own case, where there is no such similarity, if experience so lengthened and strengthened can be good for anything, it must show that quarantines upon merchandize are as vexatious as they are nugatory, and that those upon living importation may be modified without risk.

To conclude the subject of quarantine, we may fairly say, that, from the invasion of true contagion, it never yet has saved us, and that, when introduced, it has added tenfold misery to the already afflicted community. When the plague pervaded London in 1665, the institutions of quarantine, through excommunicating the miserable sick, converted every infected house into a depôt of the accumulated poison, which, being there entrenched and implanted, defied purification, and by regularly infecting the proximities, made its onward progress sure to the hitherto untouched quarters of the city. This is the case in true contagion; but what shall we say to a recent case, that of Asiatic cholera, where no actual contagion exists; where the people, if they are to believe the health authorities, are thrown at once into a state of mutual excommunication, every domestic tie set at nought, every social bond severed, and men, at all other times social and humane, made as selfish and cruel as the inhabitants of Ashantee or New Zealand? Under the paramount instinct of self-preservation, the appeals of reason and humanity will alike be given to the winds, and the terror-struck fugitive of the pestilence will shut his doors as close as his heart against those who cry to him for succour;—and can all this hideous manifestation of cowardice and selfishness be the work of one man or department of men? It can, if we are to believe the health-preservers. Cry contagion any where, and it will happen to-morrow. When the Asiatic cholera prevailed, which is as much a contagion as the thunder-storm, scenes were enacted through every quarter of Christian Europe which ought to

make man ashamed of his species. In our own Christian country, shipwrecked sailors were stoned upon the beach, under suspicion that they came from infected countries; and wayfaring women, taken with the pains of labour, were thrust from the out-houses where they had sought shelter, and committed to the tender mercies of the public highways.*

These are sad degrading histories; but what shall we say to them if they were enacted in the case of an atmospherical visitation, against which they were as powerless as if they had been directed against the east wind; but, even supposing true contagion to exist, would excommunication of the infected be the best way to mitigate its terrors, and bring about its extinction; or would it not, on the contrary, give it tenfold force through the inevitable evils of accumulation and the terrors of desertion? Fly the place, certainly, and make all fly who have the means; but to those who remain, extend the succours of humanity, and those who visit the sick may be assured that they will ultimately run less risk in saving the infected from the accumulated poison of the disease, than if they had left it to be diffused uncorrected and undiluted amongst the people. The sick in every instance should be proclaimed wards of the community, to be registered, fed, attended, and succoured; the general safety requires it; for there is scarcely any

* An instance of the first occurred at Kirkintulloch, in Scotland, and one of the last in Ayrshire, of which I was all but an eye-witness, as it happened in the neighbourhood of a family residence where I chanced at the time to be sojourning, and I afterwards took an active part in the investigation of the atrocity. Be it remembered, moreover, that on both occasions the people concerned were at all other times the kindest-hearted in the world. On the Continent, wherever cholera appeared, the frenzy of the people was even more uncontrollable. Enlightened liberal France was as much possessed with the delusion as semibarbarous Russia. Poisoned wells, poisoned bread, poisoned medicine, all found believers. The faculty, in some places, were sought to be massacred; in others, they were made to drink their own disinfecting chlorines until they died from the chemical poison; and really, when we consider that, in the first place, they were instrumental in converting Christian men into insane demons through the cry of contagion, we feel almost warranted in saying the persecution was not altogether undeserved. Let them from this never forget hereafter, that, whenever they may succeed in lashing the people into a similar wild panic, they will themselves, in all probability, be made the first victims.

contagious disease that may not be visited with safety, and treated under due precautionary observances. Excommunication alone will make it truly dangerous ; and when man, in his impotence, resorts to that terrible weapon, he arms it against himself with powers that it never could have possessed, had it been treated in accordance with more benevolent principles. Leave it unsuccoured, and then will contagion, like the mass of the hurricane, circulating at first within its own laws and limits, at last acquire onward power that can only be controlled by changes of the elements, or failure of susceptible subjects on whom it may act ; but succour it early and well, the sting will be drawn, or its venom so diluted, that even in its early stages it will be disarmed of half its terrors, and towards its close go out like the dying taper that has never been fanned into a blaze with the preposterous fuel of accumulated contagion. The great Plague of London, for months before the grand explosion, passed nearly unnoticed, and did not acquire body or power until the health-preservers interfered, not to succour but to excommunicate. Then it was that every suspected dwelling was converted into a pest-house—a depôt of the deadly contagion. The cross upon the doors was then nearly as fatal to the proscribed inmates, as the cry of mad dog in the streets would have been to the luckless quadruped. Who then would dare to succour, at the risk of having the same brand of death affixed to himself ? and how could the contagion be diluted, modified, and extinguished, but by the timeliest succours ? To these alone, under an enlightened superintendence, can we ever again look for deliverance, in the event of plague, or other deadly contagion, being introduced amongst us.

In the case of yellow fever, so often and so absurdly made the subject of quarantine, there has always existed a strong under-current of unbelief throughout the West Indies, which made the quarantine master impotent in the social circle, and only caused him to be formidable, as a false herald proclaiming imported contagion from abroad, in vindication of the community that had employed him to defend their local character and interests from the imputation of endemic pestilence. The Hankey, the Dygden, the General Elliot, and hundreds of others, have all been made to serve

the purpose, and will be made again, as long as quarantine against the impossible contagion exists. At Vera Cruz and New Orleans, in whose deep and deadly swamps the yellow fever is as much an annual as the plague is in Egypt, they would laugh the importer to scorn. Its hitherto unaccountable cessation and absences from the West Indies, some of them for a course of years, while the importation of strangers from Europe remained the same, and the seasons exhibited little appreciable difference, have alone armed the quarantine authorities with power to deceive and to impose.

The vindication of the truth has been long in coming, but it surely will come, although many have despaired of it; and the venerable Dr. Jackson,* who spent great part of his life in illustrating, by his labours, the etiology of yellow fever, was at last, in despair, obliged to confess that he had been labouring in vain. Even now quarantine and contagion ride triumphant. The medical officers of the service, greatly reduced in number, scattered and unsupported, are frowned into silence by an array of power which it would be dangerous to oppose, and the schools keep pouring forth the young and ardent disciples of the true faith, before whom the heresy of non-contagion is constrained to hide its head. When armies are again in the West Indies, and the cloud of witnesses, on the part of the last, becomes irresistible, the contagionists will probably again be silenced; but they will bide their time, and with the Treasury and the schools to back them, resume their gainful course wherever panic can be spread, and the consequent restrictions imposed.

* In a work published by him in the year 1817, he thus expresses himself: "The quarantine law is an engine of the state, and, like other of the ordinances of power, it is so sacred, that to attempt to prove that it had been made without cause, or that it is maintained contrary to reason, would be labour lost, if not penalty. It must, therefore, remain as it is until the Lords of the Council become philosophers."

YELLOW FEVER.*

A BODY of European troops arrives in a West India colony, and soon after the yellow fever breaks out amongst them. The seasoned Creolized white inhabitants feel little or nothing of it, and the coloured classes without exception, the most numerous, by at least ten to one of the inhabitants, with whom all strangers are ever in necessary close communication, stand by absolutely untouched. How is this? Import small-pox or any truly contagious disease, and they will suffer far beyond the usual sufferings of Europeans. Take them to England, they will be as liable as ourselves to fall under the dominion of typhus fevers—to the Levant, under that of the plague; of psora and syphilis, and every other infection they will have their full shares. Yellow fever alone they cannot take; and how is this to be explained but upon the obvious fact of that disease being a seasoning fever of malignant type, peculiar in a great degree to newly arrived Europeans, the product of high temperature and unwholesome locality alone, which, when they come in the crowds of a military expedition, will devastate with all the fury of pestilence winged on the false terrors of contagion, to which the imitative tendencies and involuntary sympathies of our frames have, in every epidemic, when once begun, added tenfold force? But let us here examine somewhat more closely.

One would naturally suppose that, wherever a true infection existed, the hospital where all the sick are congregated would not be the place of safety; yet there, notwithstanding, is it most likely to be found. Apply this touchstone, it will be seen that the medical officers never suffer more from the disease than their fair proportion, according to numbers; and the more immediate white

* From the Edinburgh Medical and Surgical Journal, No. 156.

attendants, orderlies and others, uniformly less, if the ventilation and discipline be good, than the soldiers in barracks who never go near the place; because, while so employed, they are saved from exposure to the sun's heat, to night guards and drunkenness. This I proved from incontestable hospital returns when I was last in the West Indies, as also, that the supposed contagion was never communicated to the surgical sick, the convalescent and others, although occupying the most contiguous beds in the same hospital.

Take another proof. A sugar ship loading at anchor, or a transport, will, as hundreds and thousands have done, lose part of her crew by yellow fever. At last she sails full of the *fomites*, or even of the persons of the diseased. Now here is the assumed contagion fairly impounded without escape, and one would suppose the disease would then do its worst; yet it does not. It uniformly stops—the sick recover every day the ship sails to the northward; she cannot, in a clear uninterrupted passage, carry the pestilence beyond the tropic, and unless her destination be Gibraltar, Cadiz, or some other port, already under the influence of the disease at the close of the advanced summer season, where the heat has long been equatorial, and the atmosphere (a European one) in all probability stagnant, and as well adapted to reproduce it as any part of the West Indies, she will arrive as free from contagion as the first day she left the stocks. But this will not satisfy the quarantine master. He has been placed there to find contagion, and, as has happened more than once at Gibraltar, will be sorely puzzled to account for the aggravated remittent fevers approaching to, or altogether the yellow occurring before his eyes, when this fortunate chance from the West Indies will at once enable him to cry pestilence, excommunication, importation, fumigation,* and all the mummary practised by that class of officials. Try again:

In the crowded transports at the beginning of last war, typhus fevers were frequent amongst newly embarked troops, and they of

* On my last return from the West Indies, in the year 1817, I was subjected to personal fumigation on three successive days, at the quarantine station Isle of Wight, lest I should introduce the yellow fever into England.

course, according to the doctrine of the day, carried the contagion to the West Indies, which afterwards became yellow fever under that exalted temperature. Here at last was importation proved, and *typhus flavus*, *typhus icterodes*, or *icteroideus*, became the true orthodox creed. But alas for the faith! typhus fever will not stand carrying to warmer latitudes. If the ship be even ordinarily clean, it will vanish long before you can have entered the tropics; and you may as well attempt to transplant a willow tree or a hazel into a West India colony, as a fever of that class. I do not utterly deny, although I never saw it, the possibility of landing typhus fever there out of a foul crowded ship, but it will not stay; it will disappear infallibly as soon as ventilation, even in the most ordinary degree, is restored. It is not to be denied that crowded convict and emigrant ships have carried typhus fever through the tropics to the Cape of Good Hope and Australia, but no importation, however foul, could establish it in these countries, or cause it to spread; nor is it, I believe, known in them even now. Seeing, then, that neither will our typhus admit of being carried to the West Indies, nor will their yellow demon be induced to visit our shores—that each will preserve its own locality and field of operation—we come again to the question, what is it? There is much in a name, and the French have defined it in one word, *la fièvre Européenne*. Well for us had we stuck to this true definition, for it would have saved an infinity of controversy, panic, and delusion. It is in a great degree peculiar to the western world, for we have no such bursts of yellow fever in the East, nor, I believe, on the shores of the Southern Pacific, as those which periodically sweep over our western colonies; but it is not unknown in the former, for one of its earliest designations was the *maladie de Siam*, although it never can be called the same destroying scourge that afflicts the western world.

It came from Boulam, say the contagionists, and is a pure contagion of negro intercourse, a concomitant of the old slave trade; but the black, as we have seen, never had, and cannot take the disease; and long, I believe, before our slave trade existed, or if it existed at all, must have been in embryo: when Penn and Venables first subjugated Jamaica to the British crown, the in-

vaders (a most lawless buccanier force, by the by) were so handled by the tropical pestilence, that it was believed they had become the objects of Heaven's peculiar vengeance. Its unexpected bursts invading when there is nothing that we can discover in the seasons to account for such a visitation, are strange and mysterious, but not more so than amongst ourselves, when diseases, previously mild, suddenly change their character and assume the most malignant aspect. We may often witness, even under our best temperatures, unexpected attacks of malignant erysipelas, puerperal fever, scarlatina, measles, &c.; while at other times, apparently of more unfavourable aspect, these probably cannot be called into existence at all; or if they do come, are unattended with any malignant character. These things are beyond our ken,—we can only see, and tremble, and wonder; but fever (idiopathic fever) is itself a mystery. Here at home, in the cold humid atmosphere of the British isles, man generates and exhales from his own body the poison of typhus fever, which may afterwards become an infection of accumulation capable of being spread to quarters far distant from the original source. Of this we have a proof in the fever brought home from Spain by our troops after the disastrous retreat to Corunna, and another not far off, in that of the French on their return from Moscow. In these our latitudes, “cold, and fatigue, and sorrow, and hunger,” under circumstances of accumulation, will generate it everywhere; but every region, every climate, will exhibit its own form of fever. With us it is typhus; in the warmer countries of Europe, remittent; in the Upper Mediterranean, plague; in the Antilles and Western Africa, yellow fever; but to generalize and confound them together would be generalization run mad, for it would be difficult to conceive diseases belonging to the same family more directly opposed to each other in all their history and symptoms. Our little domestic plague has been well called nervous fever, for its leading characteristic (when it has a characteristic) is that of subacute inflammation of the brain; that of the remittent, gastric and cerebral; of the plague, glandular and carbuncular; of the yellow fever, gastric most decidedly,—for though it always begins with headache, often of the most violent kind, that symptom generally abates long before the

termination of the disease, leaving the brain singularly free and disengaged. This work pretends to no merit beyond that of being sketchy. I shall not, therefore, attempt to dive deeply into the mysterious manifestations and phenomena of fever, but confine myself to those forms which have so often devastated our armies. Some writers have tried to establish the analogy between yellow fever and plague; but who ever heard of plague being located within the tropic where yellow fever alone prevails, or who ever saw amongst the symptoms of this last, gangrene of the skin, with carbuncular and glandular swellings?

If ever there was a disease which the humoral pathologist might claim for his own, it is yellow fever. The crasis of the blood is as much broken down before death, and its vitality destroyed, as it could be by introduction of the poison of the serpent's tooth; we may truly say it is killed by the poison, and in the language of John Hunter, that "fatal yellow fever is the death of the blood;" it wells up in floods from the mucous surface of the stomach, in the form of black vomit; it escapes from the gums, the nostrils, the eyes, the ears, even the skin itself, in any or every part, and after death it will be seen to have lost all the character and composition of blood, being found in its vessels like the lees of port wine, or the grounds of coffee. But, as I know well from dire experience, the affection from the first must be essentially gastric. The vomitings at the beginning are always in themselves clear and clean; presently they become somewhat ropy; then brown, dark, and darker, till at last the attenuated blood, escaping from its vessels and mixing with the gastric fluids, comes up under the form of black vomit. Meanwhile the functions of the brain will be restored and retained. Self-possession and courage ordinarily characterize the disease. I have seldom known any who could not give clear directions in regard to the disposal of their affairs, or fail to conduct themselves with the firmest resignation. It is not always, nor often, a painful disease in its termination, and the vomitings are never, I may say, attended with pain. A gallant officer said to me, "You see I am posting fast to the other world, and you cannot prevent it, but I am as easy as if I was in a post-chaise." Sir James Leith, who died Governor-General of the

Windward and Leeward Colonies, whose chivalrous heroic character graced and adorned the military profession, when he contemplated that harbinger of death, the black vomit, pouring from his stomach, on the evening preceding his death, rose from his couch in full possession of all his acumen, to execute some legal deeds of importance, declaring, at the same time, in reply to my dissuasions, he could with equal facility have drawn out a plan for military operation. This *sang froid*, so characteristic of the disease, has often excited wonder. Lieutenant Wright, one of my earliest patients at Port au Prince, St. Domingo, on the fourth day of the fever rose from his bed in perfect possession of his senses, dressed himself correctly, and went into the market-place accompanied by myself, where he spent some time purchasing fruits and other things, returned to his barrack-room, where he shortly expired in a torrent of black vomit. Lieutenant Mackay, of the quarter-master-general's department, Cape St. Nicholas Mole, on the day of his death, was up and dressed on the sofa, with books and papers before him at ten in the morning, passing jokes of comparison between his own dingy complexion, made so by the disease, and that of his mulatto nurse; at two he expired in the same way as Lieutenant Wright. One case more I will quote, for its exceeding singularity, even above those I have just given. A sailor on board the flag-ship Admiral Harvey, with whom I was taking a cruize for my health in the year 1816, was attacked with yellow fever, but he would not acknowledge he was ill. He was all the time up and dressed one of the earliest in the morning, saying that there was nothing the matter with him, and that he would go back to his duty next day. He owned he was sick at stomach, and that the vomitings were dark-coloured, but that was from the red wine-negus they had given him to drink, or the coffee which the cook had spoiled, and therefore made him sick; and in this persuasion, instead of going to his duty, he died on the following day.* These appearances were not uniform, and many died under very different circum-

* Similar cases are given by Dr. Rush in his *Inquiries into the Yellow Fever of Philadelphia*.

stances ; but where they existed at all, or can exist, will any one pretend to say that they can belong to such a disease as typhus fever ; that self-possession, high courage, and energy of intellect, can assimilate with utter prostration of mind and body, with fatuity and helplessness the most deplorable, and where at the best, so deeply is the brain and nervous system involved, that it uniformly tends to death by coma ; or with the plague, evidently a disease of the absorbent system, rather than the blood ?

The question of its identity with remittent fever in its higher grades is more difficult, and requires the closest examination. The presumed difference is the stronghold of the contagionist, and were we to admit, which I do not, that malaria and marsh miasmata were the same element, it would be difficult to beat him out of it. Most certainly, yellow fever has often prevailed on the finest soils, and in situations where the agency of marshes could not possibly exist. It will be more likely to extend its ravages where it has their co-operation, but it assuredly can exist without it. The singularity is, that, with or without this agency, the course and the event will be precisely the same in all severe cases as if it had been the sole agent. The marsh is doubtless the most common field of operation, but it is not the only one, and we must own that there may be other terrestrial emanations of deadly character besides those of the swamp. This is very perplexing, for remittent fever is a regular disease of season in all hot countries. It seldom displays the fury of an epidemic, and its invasions, progress, and departure, can be calculated upon with something like certainty. The yellow fever attacks in furious currents, often quite unexpectedly, and rarely, even in the West Indies, invades in successive years. Remittent fever is an annual of the eastern tropic, the same as the west. Yellow fever, though not unknown there, is never, I believe, epidemic. Remittent fever often runs the patient into the grave, but seldom with black vomit ; the true yellow fever always. In the first, an emetic, although it may not be a recommendable prescription, may be administered at almost any period of the disease with safety ; in the second it is ever fatal and deadly.

Were the last no more than a disease of bodily condition in the

unseasoned European, why is it so often away, as it frequently is for years, when the worst remittent fevers prevail; or if an affair of seasoning alone, why should it attack a seasoned garrison, say of Gibraltar, in one year out of eight or ten, and eschew the visitation in all the others of equal, or it may be of higher, temperature? These are puzzling considerations, quite enough to make any candid man pause before he permits himself to pronounce upon the identity of two diseases so apparently different in their manifestations, progress, and history. They will often appear together, and run side by side, causing much confusion to the inquirer; but are they the same? Whether they be or not, one point has been clearly ascertained, that there is no contagion whatever appertaining either to the one or the other. Even the matter of black vomit itself cannot be made to serve the purpose of an inoculator. It has been received hundreds of times upon the hands, the clothes, and persons of the attendants, with impunity. The dissector has often subjected it to chemical examination, and others have sought a more intimate acquaintance with the same results*. And, after all the foregoing, is this more unaccountable than what every experienced man has witnessed here at home in our own scarlatina, where, in one of its epidemic visitations, the patient will suffer no inconvenience but from the *nimia diligentia medicorum*, and in another be struck with death as hopelessly and irremediably as if he had been bitten by the rattlesnake?

There are pure soils in the West Indies, as pure as any on the earth's surface, but I will venture to say, send a European army to the best of these, and if it be near the level of the sea, they will be extirpated just as surely as if they had been located in Demerara, or any of the deepest swamps in the world. This is a sad

* To show how the American faculty appreciated this vaunted contagion of black vomit, I will here relate an incident I recollect reading in a periodical of the time. A party of them had procured a chamber-vessel full of the liquid from a dying patient; this they tasted, smelled to, stuffed up their nostrils, into their ears, and inoculated themselves in every variety of way, until one of them—but I here must call in the aid of another language: *oculis, in syringem quæ forte ibi jaceret, coniectis; instrumento hoc in manus sumpto, et nigro liquore impleto, enema copiosum in corpus suum injecit.*

exposure, but turn to our annals, it will there be seen that every expedition sent from any part of Europe (even including French and Spanish) to the Havannah, Carthagená, St. Domingo, or the windward Antilles, had but one termination, and that, too, for the most part within the year—the burial of the troops from yellow fever. Of this I shall here offer some illustrations. The grand armament from Cork reached St. Domingo early in the year 1796. The intention being to conquer and retain the country, it comprehended a noble host of many thousand men, including light cavalry, and every other arm of war. The regiments, on landing, were in general healthy, at least the 67th regiment, of which I was surgeon, was in perfect health. Soon after disembarking, yellow fever broke out amongst the troops, at every station and in every place. The mortality was about the same everywhere, or, if possible, it was worse at Cape St. Nicholas Mole than at any of the other stations. This was strange, for if ever there existed a dry rocky but jungly district in the world it was there. Having, in the after part of our service in St. Domingo, been stationed there for twenty months continuously, and made it my daily practice to traverse every part of the locality, I can speak to that point without hesitation, the only difference being that, as soon as the seasoning fever had passed away, the district became healthy, and continued so, while in all the declared malarious quarters there was no cessation of the sickness. I speak here of the officers in every rank. These at first had suffered even in greater proportion than the men, but afterwards they became as healthy a community as ever I lived amongst in any part of the world. It was different with the common soldiers, whose drunkenness in those days was unrestrained and terrible, and in that climate they suffered the usual consequences. On inquiring amongst the French faculty and the old inhabitants of the place, we learned that, during the American war, when a large body of French troops had arrived there from Europe to aid in the invasion of Jamaica, they had been destroyed by the same fever as fast or faster than ourselves; and to show how fast that had been in our case, I shall here give a melancholy proof. During the earlier part of our residence, while all were deeply interested to stop the mortality, a census

was taken of the inhabitants of the town (exclusive of the negro slaves) and the white soldiers, when they were found to be as nearly as possible of equal numbers, but by the time we had buried the original complement of 1500 men, they (the inhabitants) had not lost more than one in thirty of all ages.

The island of Barbadoes affords another instance. It is impossible to imagine a country of purer soil and better ventilation. It has long been thoroughly cleared, and there being no mountain ridges of sufficient elevation to obstruct the breeze, and create a night-land wind, that from the sea blows night and day, making a fair breach over the land; but as it is the ordinary landing place of fresh troops from Europe, there was no place during the war where there existed greater mortality and suffering from yellow fever. In fact, *la fièvre Européenne* prevailed there, and will prevail in every part of the West Indies for as long as its population is furnished from the colder regions of Europe. Still, however, does it proceed from a terrestrial poison? The sea exhibits none of it. While we were thus perishing of yellow fever at Cape Nicholas Mole, the cruising squadron, comprehending eight sail of the line, with many smaller ships, was healthy, none suffered yellow fever but those that were obliged to lie as guard ships at the unwholesome anchorages of Port au Prince, or Port Royal, Jamaica, and such like; and when, in the great naval campaign between Rodney and De Grasse, at the close of the American war, the decisive action of the 12th of April took place, the contending fleets were healthy, and yellow fever did not exist amongst them. Fleets have often remained healthy for years (at least free from yellow fever, unless when they got it at the unwholesome anchorages of Port Royal, Jamaica, English harbour, Antigua, or Port of Spain, Trinidad) in the West Indies,—armies never.

No experienced men, unblinded by the prejudices of the schools and authorities, or biassed by the expectation of quarantine office, can seriously believe it to be a contagion. It is a terrestrial poison which high atmospheric heat generates amongst the newly arrived, and without that heat it cannot exist; but it affects no one from proximity to the diseased, and cannot be conveyed to any low temperature. This was finely exemplified at Port au Prince,

St. Domingo, where I spent the earlier months of the year 1796. Our head-quarters were the town and its adjunct, Brizzoton, as pestiferous as any in the world, and there we had constant yellow fever in all its fury. At the distance of a mile or two, on the ascent up the country, stood our first post of Torgean, where the yellow fever appeared to break off into a milder type of remittent. Higher up was the post of Grenier, where concentrated remittent was rare, and milder intermittent, with dysentery, the prevalent form of disease; and higher still was Fourmier, where remittent was unknown, intermittent uncommon, but phagedenic ulcers so frequent as to constitute a most formidable type of disease; and higher still were the mountains above L'Arkahaye, of greater elevation than any of them, far off, but within sight, low down in what was called the bight of Leogane, where a British detachment had always enjoyed absolute European health, only it might be called better, because the climate was more equable than in the higher latitudes. Here were the separate regions or zones of intertropical health mapped out to our view as distinctly as if it had been done by the draughtsman. Taking Port au Prince for the point of departure, the three first could be traversed in the course of a morning's ride. We could pass from the one to the other, and, with a thermometer, might have accurately noted the locale of disease, according to the descending scale, without asking a question amongst the troops who held the posts: and what kind of contagion must that be, which, amongst men in necessary intercommunication, cannot be conveyed from the one to the other, which refuses to mingle with another of lower temperature, although within sight, and so near, topographically speaking, as almost to touch? The men could, and did, constantly exchange duties, but not diseases; and it was just as impossible, and more so, to carry a yellow fever up the hill to the post in sight, as it would have been to escape had they been brought down and located amidst the swamps of Port au Prince. These things were known to every person in the army, whether medical, civilian, or military, and amongst them all there was not to be found a single person who had the smallest belief in contagion, provided always he had been a year in the country, and possessed opportunity of seeing with

his own eyes,—all, I may say, came out contagionists*, myself amongst the number, none remained so. It was impossible that we could, in face of the every-day experience of our lives; and if we had, the very women and drummers of the army would have laughed us to scorn, because they had long discovered there was not the smallest danger to be apprehended from the closest proximity of the sick. The woman knew that when she slept with and attended her dying husband she had not been infected, and all were sensible that no safer duty could be imposed than that of attending the sick bed.

I shall here pass over, as unfitted to a periodical publication, on account of their length and minuteness, various cases of unquestioned importation of yellow fever, where the sick were received into our hospitals literally with open arms, without ever communicating infection in any way; and proceed to take up the question on stronger grounds, which, I believe, cannot be impunged.

Contagious fever, with the exception of the exanthemata, cannot exist in the torrid zone, nor anywhere else in a temperature amounting to 80° Fahrenheit long continued.

It is infallibly dissipated by it. The infection of the plague itself has been proved to cease in the Levant on the advent of the midsummer heats, and to proclaim that the yellow fever is a contagious disease, while it is the product of the disinfecting principle itself, of that degree of atmospheric heat with which infection is incompatible, and the contagion of fever cannot exist,

* The vagaries of these strangers were at times very amusing. A newly-arrived contagionist physician, struck with the great mortality on his sick list, despite of his very best prescriptions, was fortunate enough at once to hit upon the true reason; they had all been feeding—chewing the cud, as it were—on their own poison. According to the common custom of hospitals, the sick lay with their heads to the wall, and the matter of contagion which they threw out at every expiration, rebounding from its hard surface, was again drawn in with their breath, so that it was impossible they could recover. The word was forthwith given, “feet to the wall, heads to the centre” (the middle of the room), and in this extraordinary position they were found on the following morning when the officer of the day and the inspector made their daily visit.

is as unphilosophic an assumption as ever was imposed upon the fears and credulity of the people. The most crowded slave ship that ever sailed from the land of rapine and crime, has never yet succeeded in generating infectious fever amongst the suffocating human cargo; and the special law of retribution, through which, if such a disease could arise amidst the naked victims, their white oppressors certainly would be destroyed by its contagion, is here suspended by a mightier general law of divine wisdom, which, by ever furnishing the disinfecting agent, has affixed its veto to the extension of contagious fever in the regions of the torrid zone. The schools will of course cry out against this invasion of an heirloom so cherished as contagion. They have long enrolled yellow fever in its lists, and to secure it a place, have dubbed it *typhus Africanus*, being the very disease Africans never had and cannot take; but typhus is the watch-word of fear, and therefore far too valuable to the contagionist to be thrown away even in a tropical climate. It may be vain to tell him that the burning clime of Africa utterly repudiates the typhoid principle, and that if forced into it through the grossest mismanagement of sailing vessels, it will be dissipated as soon as the decks are purified; the true contagionist ever holds to the faith and rejects the heresy.

Is this denied? Look to the Eastern world, where throughout the whole extent of our empire such a phenomenon as a contagious fever has never yet been dreamed of. The tropical heat is most prolific of fevers, but never of contagious ones. For these, you must go to seek in the records of the quarantine office, and the superannuated prejudices of the medical schools of Europe. These authorities, however, are not easily beaten down. They are bolstered up by all the strength of the home faculty, who never have seen a tropical fever, and upheld by the power of government, whose patronage would be diminished were the state engine of quarantine, so often used for political purposes, to be abolished. Besides, in these matters, the non-professional mind is little qualified to judge. It has ever been in the keeping of the home faculty, and almost any impostures, as may be seen from the patronage bestowed upon quacks, may be imposed upon it. Con-

tagion has long been the creed of an age, it is to be hoped soon to pass away ; and fashions in physic, more especially when upheld by power, are not to be opposed with impunity.

The yellow fever cannot be contagious, because the coloured races, whatever may be their exposure to the supposed infection, never take it ; nor does approximation and communication with the sick cause Europeans to be in the smallest degree more liable to fall into the disease than if they had never approached the sick bed.

It cannot be a contagion, because it is restricted to particular localities, temperatures, and elevations. "Places, not persons," constitute the rule of its existence. It rarely admits of being carried in the persons of the most highly diseased to other localities, even of the same temperature, if better ventilated ; and the villages in the neighbourhood of towns where it has been raging, and to which the infected have fled for refuge, have seldom or never become subject to the disease from admission of the strangers. This has been exemplified times out of number, at New Orleans, Vera Cruz, Gibraltar, and Cadiz. Places, not persons, comprehend the whole history—the etiology of the disease. The persons of the sick are always safe to approach—their habitations never. Change the last, the disease is certainly left behind ; remove the first, and you at once annihilate the power of infecting others at the changed residence.

It cannot be a contagion, because the degree of heat that is found to dissipate the best marked contagious fevers, is the life blood of this. It cannot exist but at the disinfecting point, and when the plague is dissipated by the heat and rarity of the atmosphere, this begins. So it is with typhus fever. This last goes out when you enter the tropic ; the yellow fever commences. The first mentioned is a communicable infection in the colder latitudes ; the latter, the pure epidemic of a hot climate that cannot be transported or communicated upon any other ground.

Again, places not persons. Let the emphatic words be dinned into the ears of the Lords of the Treasury, of Trade and Plantations, until they acquire the force of a creed which will save them

hereafter from the absurdity of enforcing a quarantine in England against an amount of solar heat of which its climate is insusceptible. Let them farther be repeated in the schools of medicine, until their professors become ashamed of imbuing the minds of the young with prejudice and false belief, which, should they ever visit warmer climates, may cause them to be eminently mischievous in vexing the commerce, and deeply and injuriously agitating the public mind of whatever community may have received them. Once more, for the last time, places not persons.

Turn to the celebrated work of Sir William Pym on the Boulam Fever at Gibraltar, in 1815, which has, ever since it was published, so fatally influenced all the health authorities of the country ; and at page 51 will be found an illustration so clear and conclusive of the effects of change, even to the shortest distance, whenever yellow fever prevails, that it well deserves being recorded again for the guidance of all who may hereafter be called upon to act under similar circumstances. He tells us that, when yellow fever appeared in the town of Gibraltar, he, armed with military authority, removed all the inhabitants of the infected locality, sick and well, with their baggage, to the neutral ground outside the walls, and that the epidemic forthwith ceased. He ascribes the deliverance to purification of the houses, and so forth ; the philosopher would ascribe it to removal from malarious site. The conception was erroneous, to say the least of it ; the execution so salutary, that it ought to be held up for imitation in all times to come*.

* His words are, " I directed a sufficient number of tents to be pitched outside the gates of the garrison, on the neutral ground, with a proportion of bedding, &c. and in the middle of the night, without any previous information being communicated to the inhabitants, a strong guard, with a sufficient number of carts, proceeded to the infected district, and conveyed the different individuals of the infected families, sick and well, with their baggage, to the encampment, which was established as a lazaret and kept in quarantine. I placed the sick in separate tents, and appointed persons to attend them who had had the disease at a former period. A cordon of troops was established round the infected part of the south district, which was kept in quarantine for fourteen days ; proper persons were also appointed to superintend the purification of the houses, furniture, &c. and to report the slightest appearance of disease among any of the inhabitants, who were also paraded and inspected daily by one of the hospital staff."

Yet, allowing all the foregoing to be incontrovertible, which it certainly is, still is there much of the unfathomable in regard to yellow fever—its occult sources; its appalling outbreaks, often without preliminary warning; the absence of gradation in the types of fever previous to the grand explosion; its being restricted to the European races, and being confined almost entirely to the Western world, mark it as a disease equally strange and terrible. The idle stories of its being imported are negated at once by the impossibility of conveying it, as we have just seen, even in the persons of the sick, to the shortest distances—from the inside town of Gibraltar to the walls outside. Wherever it appears it is generated by the sun's heat from the soil of the place; and it cannot be sent or carried to another, for every spot must have its own, or none. Stagnation of atmosphere accounts for much in regard to it, but not for all; vegetable putrefaction for little or none; nor does malaria for the whole, unless it be some occult malaria of the Atlantic shores; for prolific as the eastern tropic may be, and certainly is, of malaria in all its forms, it rarely produces the epidemic characterized by the leading symptom of black vomit. *Pestis occidentalis* would be a good designation, were it not for the superstitious alarm conveyed in the first word; and *fièvre Européenne* is far better. Establish this, and the question would be solved in as far as the West Indies are concerned. Gibraltar and Cadiz, and the towns of North America, are not so easily disposed of: but tell the importers that, while true contagion, such as that of plague and typhus fever, is never introduced into any of them—at least has not been for more than 150 years—yellow fever appears periodically; and that, instead of looking for the coming of the pestilence from beyond the Atlantic, they should turn their attention to the sun that beams above them, to the ground on which they stand, and the qualities of the soil under their feet.

It is there the poison lurks, and has ever lurked. Fly from it certainly, and enjoin all who have the means to fly the place. To pen up the inhabitants upon the infected ground is to aggravate the disease a thousand fold, and is, in fact, as cruel and absurd as it would be to barricade the doors against the escape of the in-

mates of a house that had taken fire, on the insane pretence that they would otherwise spread the conflagration. The quarantine authorities will no doubt interpose to save the world from the dire contagion: but let them be referred to the annual epidemic at New Orleans for information how often the yellow fever has been conveyed from thence to the upper settlements on the same river, to which the fugitives, sick and well, uniformly fly for refuge, or even to the steamers that carried them; how often at Vera Cruz it has been carried out of the town even to the first stage on the road into the interior; or how often in Spain it has ever been transported, except to another station under the same circumstances, of heat and drought and defective perfilation, therefore falling, if not having already fallen, into the same predicament from the same causes. Let them inquire whether seclusion and shutting up has ever saved the terror-struck. In the army of St. Domingo it was notorious that they were ever the first to be taken ill, and the surest to die; and during the yellow fever epidemic of 1816, at Barbadoes, I have recorded remarkable instances of the same both from my own observation and that of others. In short, whenever the endemic agency could not be avoided, the best place of safety was often to be found in the sick apartment, for there quietude reigned, and fatigue, exposure, and intemperance, were most likely to be avoided.

One of the most scientific and enlightened physicians of his time, the late Sir Gilbert Blane, was nevertheless so staunch a contagionist, that after admitting that yellow fever seldom appeared but in sea-port towns, without spreading to inland habitations and the rural population, he does not stop to inquire how this could possibly have happened, had it been, like scarlatina and small-pox, a true contagion, but describes his opponents in the question as being filled with the blind and paradoxical rage of controversy, founded on prejudices and preconceived opinions, and having minds imbued with the dogmas of non-contagion. He surely ought to have seen that all their prejudices and preconceived opinions must originally have been on the other side, (at least mine were;) for the medical schools of Europe had never taught any doctrines but those of undoubted contagion, and the conviction of non-contagion

must therefore have been an emancipation from, and victory over, the inherent prejudices of education. The dogmas, too, that so indelibly imbued their minds, could only have been impressed there from seeing with their own eyes in hundreds and thousands of instances, that it was impossible to communicate the disease by personal contact. He assuredly was right in repudiating the folly of attributing the invasion of yellow fever, in such towns as Gibraltar and Cadiz, to the agency of marsh miasmata. I believe that none such can ever be said to abound, or I may almost say even to exist, in either the one or the other; but their dense and growing population rearing obstruction to the breeze at every increase of buildings, besides accumulating every moral and physical nuisance, might well qualify them to become the subject of whatever endemic or atmospheric pestilences the season might bring. A contagious atmosphere might then easily be generated from condensed accumulation; but the persons of the sick would cease to be contagious as soon as they were removed into purer air.

Drought under an equatorial temperature, and in the favouring localities, would seem to be the *sine quâ non* of the appearance of yellow fever in Europe. In the terrible epidemic of Cadiz, in the year 1800, no rain had fallen there for seventy days, (vide Annual Register,) and vegetable putrefaction had become just as impossible as the putrefaction of an Egyptian mummy, or the dried stock-fish of Holland. When the same drought pervaded Gibraltar and Barcelona, there needed not the arrival of smugglers to bring the pestilence, and the officious energy of the quarantine staff, when, by excommunication, fumigation, and such like, they affected to stay what the general laws of climate and season were in operation to accomplish, might be likened to that of the fly upon the wheel. For so long as the climate remained the same, they could not touch or turn the disease; and when its heat was diminished by the change of season, they could neither expedite or retard its departure. The becalmed bases of hills have ever been the favoured site of yellow fever, and, as at Gibraltar, that of Ascension Hill has repeatedly felt its scourges since the time of its famed importation there by the Bann frigate from Sierra Leone; and

should that settlement ever grow into a crowded town, we may fairly conclude that its visitations there will be far more frequent than they have ever been at Gibraltar or Cadiz. Even here at home, in certain peculiar seasons of heat and drought, yellow fever may not have been entirely unknown. The year 1807 was one of these, when two soldiers of a militia regiment in the garrison of Sheerness, in Kent, died of a fever under my own inspection, whose cases might have passed muster for the endemic of St. Domingo. Our climate luckily did not admit of its spread, for an opportune thunderstorm, with its accompanying deluge, and great reduction of temperature, washed out the beginning fever, and nipped the epidemic in its bud.*

Ships have often arrived in the ports and localities where the yellow fever was endemic, with that disease on board, but, unless they came at the season of its epidemic spread, their advent would be as harmless as that of the healthful breeze of the sea. It never yet was imported as an infection anywhere, and while the disease continues as it is, never will be in this world. If it was not there before they came, they could not bring it; and if it was, the importation would be a needless work of supererogation—as needless as that described in the homely saying of carrying coals to Newcastle. I am not here dealing in vague assertion, for I have given

* Whenever in this volume I make use of the words contagion and infection—contagious and infectious, I offer them as altogether synonymous terms. I do not pretend to say that the signification of the Latin verbs *contingo* and *inficio* is in all respects the same, but so much confusion has resulted from the different meanings insisted upon for each, that I think it is far better thus to resolve them all into one. In one of those terrible bursts of yellow fever at Gibraltar, about the beginning of the present century, the governor directed the medical staff to be assembled for the purpose of resolving on the best means of staying the pestilence. Having waited several days for the report he became impatient, and was informed that, as soon as the conclave had met, they fell into hot dispute as to whether the disease was contagious or infectious, and the point was not then decided. I think the conference ended in a resolution to fire and keep firing all the guns of the fortress for a whole day, which was accordingly done, to the great astonishment of the adjacent countries and seas. The above is taken from an excellent, but, I fear, unpublished report of Colonel Wright of the ordnance department, who was then at Gibraltar. It may be proper, moreover, to add, that whenever the terms pestilence and pestilential occur they are not to be taken as implying contagion unless it be so stated.

proof of the foregoing, in my reports of the Regalia transport from the coast of Africa, and of the Childers sloop of war from the Spanish main (vide Reports A. M. B. offices, and 8th volume Medico-Chirurgical Transactions.) In both these ships the disease was certainly generated from the condition of their holds, because, as soon as they were cleaned and purified, the fever ceased. Before that was done, whatever stranger slept in either of them for a single night, was assuredly taken ill; whoever was brought sick ashore into the fully occupied wards of our general hospital, and received with open arms, brought with him as little infection as the new-born babe. Thus has it ever been, and could not be otherwise; but the belief in contagion was dear to the panic-stricken, the prejudiced, the designing, and the inexperienced, and they have ever sought to impress that belief on the world.*

* The first of these ships, in addition to a full cargo of liberated Africans, had, at the very time of sailing, laid in for fuel, a large quantity of green wood so hurriedly, that when I examined it, even the leaves had not all been stripped off; and the hold of the other was in a state of foulness and fermentation absolutely incredible.

CONTAGION OF TYPHUS FEVER

AND

CONTAGION GENERALLY*.

THE true essential contagions, which, under a gaseous or aerial form, act of themselves independent of, and unaided by, the circumstances of climate, atmosphere, locality, quantity, and accumulation,—do not amount to more than five or six, and may all be comprehended under that class, of which it is the distinguishing characteristic, to occur only once, generally speaking, during the lifetime of an individual; with the exception always of those infections that can only be communicated by inoculation, or the actual contact of matter. I am far, however, from pretending to say that contagion is limited to so confined a range; for the whole class of *pyrexia*, under every shape and form in which they can be presented to us, including even those of erysipelas and ophthalmia, can be made infectious diseases† through an undue accumulation of human exhalations, and defective medical police, constituting at these times, and under these circumstances, an undoubted well-marked atmospherical contagion of locality,—but of locality alone.

From the first of this enumeration I have no hesitation to strike out typhus fever, and class it amongst the latter; but here, in order to bring conviction to my readers, I feel that it will be necessary to expatiate and explain at some length.

Typhus fever, a disease purely endemial, may be called the endemic of the British isles, and the same parallels of latitude on the continent of Europe.‡ If we could suppose it during any

* From the Edinburgh Medical and Surgical Journal, No. 112.

† The first of these may even be akin to hospital gangrene in our great hospitals, or not impossibly the same disease affecting a different tissue.

‡ Vide Bancroft.

summer season to have become utterly extinct, it would certainly spring up again in the wet and cold weather of the first winter months, before the frost had fairly set in, and keep its hold amongst the inhabitants, until warm, and, above all, dry weather, had again caused it to abate. So great is the tendency of this our soil and climate to produce it spontaneously, that any depressing cause, subversive of bodily vigour, will, in a remarkable manner, predispose the body for falling under its influence. Thus, the humid, ill-ventilated, and imperfectly heated dwellings of the poor, are in such seasons its constant abode; and if to these we add the adjuncts of "cold and fatigue, and sorrow and hunger," the sad concomitants of poverty, we need not wonder when we see it devastate the hovel and the cottage. Even so trifling a cause as the continuance of wet feet,—that most noxious and depressing, because adhesive and permanent application of cold. where the circulation at the extremities must necessarily be the weakest,—has been known to induce an attack of typhus fever, when the moral and physical causes just enumerated could have lent little aid otherwise to the development of the disease.

Typhus fever, then, is not only an endemic disease *sui generis*, but, so strong is the disposition to that form of pyrexia, that it is prone to become an aggravation and super-addition to other forms of fever; and all the remittent types and degrees, as well as the catarrhal and peripneumonic fevers, are apt, either when long continued, or improperly treated under a heating regimen, to glide into it. This must be familiar to every practitioner, and I need not here dilate upon it. But besides the endemic origin which I have here explained, there appears to be another source of the typhoid poison quite independent of season, atmosphere, and locality, which gives rise to a most virulent, aggravated, and dangerous form of this fever,—I mean that which arises from accumulated human effluvia in crowded ill-ventilated hospitals, prisons, ships, barracks, or other habitations.

I acknowledge it to be unphilosophical and incongruous to imagine that two fevers, springing out of sources so distinct, should yet so entirely resemble each other, that they have ever

been treated, classed, and acknowledged for the same; nor can I afford any satisfactory explanation of this phenomenon. But the fact is certain that they do so arise; for, in the contagious ulcer, or hospital gangrene, we possess a demonstrable, tangible, and visible proof of its existence. This ulcer is precisely a local form of typhus fever,—a visible incarnation, if I may use the term, of the typhoid poison. It never occurs but under the most distressful crowding of sick and wounded; and it is then so highly contagious, that all other ulcers, or even abrasions of the skin, however healthy before, are speedily involved in its destructive course; and so highly does it impregnate the surrounding atmosphere with its contagion, that it is not even safe to bleed a patient in the same ward where it lies. You may look in vain for its origin under any circumstances in our hospitals, but those just enumerated, as being capable of inducing typhus fever upon the sound healthy inmates; but in the wounded, where the poison finds a nidus and a vent, instead of affecting the constitution generally, it commits its hideous ravages upon the wounded limb.*

In treating this deeply interesting subject, I strongly feel how misplaced and unworthy would be any attempt at sophistication of argument, or desire for victory, at the expense of truth; but the truth is of so much importance, that I shall proceed, even at the risk of being tedious, to farther illustrative evidence and argument.

That moist cold, when applied to the destitute under circumstances of moral and physical depression, is, and ever must be, the endemial source of typhus fever, causing it to spring up spontaneously in this country with each revolving season, I have already shown. Should it be doubted, I may refer to the two

* The above relates to hospital gangrene alone, and has no reference to endemic or constitutional ulcers, which, however formidable their ravages may be, are never in themselves contagious. It may, however, reconcile my readers to the above doctrine, to state the fact that ulcers, devastating ulcers, have been seen in many parts of the world to be the substitute for endemic fever. Our army in St. Domingo, during the years 1796-7-8, abounded with such proofs; and in some parts of the East Indies, where I have never been, I understand that examples of it are even more rife.

extremes of the tropical regions, and those on the borders of the arctic circle. In the first it is never endemic, and cannot be called into existence under any circumstances but those of the most defective medical police; and in the second, while sojourning there, I found to my surprise that it was almost equally rare; but the cause was not altogether hidden. The Russian peasant, although inhabiting the most rigorous climate of Europe, feels little of moist cold. The approach of winter is sudden, and the ground is almost immediately bound up dry in frost. His habitation is close and ill-ventilated; but he heats his stove night and day to an astonishing degree,—to that degree that humidity is incompatible, and no contagion can exist; and every Russian and Finnish peasant, however filthy in his clothing and person, invariably takes a vapour-bath at least once a week during all seasons of the year. The Esquimaux Indians—those children of the arctic circle—filthy even to a proverb, are said to know nothing of typhus fever. They live in their snow-built huts—the driest of all habitations—although heated to a high degree in the centre by a large lamp of whale oil, and know little or no disease till the advent of their short summer, when the melting of their fusible walls subjects them to pleurisies in as great a degree as the inhabitants of Europe.*

Such, then, is the endemial (and irremediable in a great degree, because endemial) source of typhus fever amongst us. The other *fons et origo mali*, undue accumulation of human effluvia, ought to be remediable at all times amongst civilized nations; but where the evil has been neglected or overlooked, the effect is certain. No place or climate can be altogether exempted from the punishment. Witness the Black Hole of Calcutta, where the survivors of that horrid night underwent the ordeal of putrid fever as soon as they were released.† Witness our own jails and prisons, where,

* A reclaimed Esquimaux, of the name of Zaccheus, who was hired to accompany the first northern expedition under Captain Parry, although cradled midst the Polar snows, could not stand the vicissitudes of an ordinary Edinburgh winter, but died of *pneumonia* in the Infirmary there, during the winter, 1819-20.

† Vide Governor Holwell's narrative.

in worse times than the present, the condition of the prisoners became so terrible, that it was often unsafe to bring them into court for trial ; and witness, too, the hospitals of our fleets and armies, when, under the difficult circumstances of warfare, wholesome accommodation for their numerous inmates became too often a matter of impossibility. But the principle even goes further, and may be found existing amongst the lower animals, which, when cooped up in the close holds of ships in unfavourable weather, become actually infected with what may be called an epizootic typhus fever.*

All this I know has been denied by other writers, more especially by Dr. Bancroft, whose philosophic inquiring mind was never to be satisfied with mere words ; and it must be acknowledged, with some apparent reason ; for the generation of the typhoid poison has been never known to come from a hurried process, and would seem to proceed from a slower concoction than the sudden crowding together of a number of people, for a single night, could furnish. It is farther well known, that typhus fever can neither be carried into tropical climates (for even the plague stops at the tropic of Cancer), nor take root there. Governor Holwell, then, may have ignorantly asserted in his narrative that he was taken with putrid fever after his release ; but the boils and critical abscesses with which he and his surviving companions were covered, show that some morbid poison must have been imbibed into the system ; for boils do not in any country come as a result from violent perspiration, which in India and other hot climates produces the eruption (and no other), which goes by the

* The term *typhus* fever may appear ridiculous as applied to the lower animals ; but the author actually saw something very like it when a passenger on board of a transport that was employed to convey a cargo of sheep from the Island of Exuma in the Bahamas, to Cape Nicholas Mole, St. Domingo. The weather being fine when the sheep were embarked, and the run expected to be short, a very great number was put on board ; but the passage turned out tedious and stormy, with closed hatches, causing a great portion of the animals to die with black tongues, putrid mouths, and the blood in the larger vessels like the thin lees of port wine. The disease could scarcely have been scurvy, for there was plenty of fresh vegetable provisions ordered on board.

name of prickly heat. Relying upon the respectable authority and pure character of the philanthropic Howard, and other writers whom he quotes, he (Bancroft) has evidently been misled, when he affirms for a fact that naturalized typhus fever does not exist in any other countries of Europe than those of the British isles, and that it only visits the former as a transient imported disease from the latter.

The strongest negative evidence to the contrary of this has been furnished by every European army in the field during the late war, and will be furnished hereafter, so long as armies pursue the operations of war, according to the system of Napoleon, during the winter season, instead of going into winter quarters. In the colder countries of Europe this was to have been expected; but Portugal and Spain, after their summers were past, were even more prolific of the typhoid contagion, if possible, than Germany and Russia. From this cause the Spanish army of the Marquis Romana, when it crossed ours in Galicia on the retreat to Corunna, was in a state of pestilence—a moving cloud of the disease. The Portuguese *Depositos*, as they were called (district prisons for the conscripts), managed by villainous native commissaries, who robbed the recruits in every way of their food, clothing, and supplies, were destroying the army from this cause far faster than it could have been recruited, until they were placed under the direction of British officers; and the people of the country, when driven from their homes and penned within the lines of Lisbon, during the winter of 1811, were cut off in thousands by the disease. To say that these were not typhus fevers would be ridiculous. They were absolute caricatures of the disease in all its features—not to be matched, I am convinced, in the worst times of Ireland. The Spaniards could not receive the infection from the British, for with us they never amalgamated; and their armies, remote from our line in the winter seasons, were paralyzed from the same cause as Romana's; but we got it from them whenever obliged to follow in their course, and take up their infected cantonments. Nor did we give it, nor even take it, from the miserable population inclosed within our works near Lisbon;

—the winter diseases of the well-fed, well-lodged troops, being those of the season and field operations alone, not typhus fevers.*

I acknowledge that there may, indeed must, be a peculiar aptitude in the moist soil and climate of the British isles for the generation and nurture of the typhoid poison; but this property of generating the typhoid principle is not exclusively peculiar to the insular soil. On the contrary, it is common to the human race whenever the circumstances here denoted can be brought into full operation and combination; and even the high temperature and dry atmosphere of the tropics, however soon and certainly it may dissipate the principle, is not altogether proof against its generation,† which has infested, and will infest

* I can speak to these points with the more confidence, from having held the situation at the time both of Inspector-General of the Hospitals to the Portuguese army, and that of a member of the Junta that sat at Lisbon for the succour of the distressed population.

† The following extracts from a report of my own to the Army Medical Board, dated Barbadoes, September 8, 1816, on the Childers brig of war, may probably illustrate this point; and, as they were written without reference to any ulterior object or purpose, but were simply a statement of facts, they may on that account be reckoned the more conclusive.

This vessel was in so distressed a condition from the sudden invasion of fever during a ten days' passage from Trinidad to Barbadoes, that, had she not been favoured by the winds, she could not, in all probability, have been navigated into port. Nearly one-half of her people had perished in that short time, and five-sixths had been taken ill. The following is the description:—"All the medicines that are commonly used in fevers had been expended several days before the ship got in, as well as the sick stores and hospital comforts of every kind, from this unlooked for accession of disease. When the sick arrived in hospital, four of them were in the last stage apparently of typhus fever. Their vomitings, such as are usual in tropical fevers, had ceased, as I understood, for days. They were in a state of low delirium, with *subsultus tendinum*; the teeth and mouth furred, with black dry tongues. One of these patients exhibited the well-known symptom of picking at the bed-clothes; and, on the whole, I had never before seen fever so markedly typhoid within the tropics. Some of those too, who were recovering, were in that fatuous lost condition of intellect that is often seen in patients recovering from an attack of *typhus gravior*, and may be called peculiar to that disease. The sick medical officers were in a state little capable of giving clear accounts of the origin and progress of the disease," &c. &c.

In another part of the report upon the origin and causes of this state of things, is the following:—"The rains that ordinarily fell, according to report, during

mankind, so long as they fail to observe the decencies of civilization, or neglect the preservatives which reason teaches, and all governments ought to enforce. Happily for the continuance of our race, this infection, so easily generated, is essentially an

six hours of the day, obliged the greater part of the crew to seek shelter below, mixing with the sick, and generating from the crowd a vitiated foul atmosphere, as much to their own danger as to the aggravation of the disease of those already ill. Such a condition of atmosphere within the ship seems in fact to have generated what many think impossible in these climates,—a hybrid compound fever of the widely different types of the ardent and *typhus*, and to have been propagated by contagion, under circumstances of mortality and distress that rendered it impossible to preserve ventilation and discipline.” In continuation, after the sick were housed in our excellent Hospitals, the report proceeds to state : “ It is most gratifying to report that no sickness of any kind has been communicated to any medical attendant, or other person of whatever description employed about the sick, although the devotion of the medical officers to their duty on this interesting occasion has been unbounded. The hospital assistants have scarcely ever quitted the hospital yard since the seamen were first brought on shore ; and two of these are young men recently arrived from England, for whom I had the most serious apprehension,—not that they would be exposed to contagion, which in these climates I have ever found to be impossible under circumstances of due ventilation, discipline, and accommodation,—but that fatigue, watching, and exertion, would predispose them to be attacked by the endemic yellow fever of the country. In regard to the ship, I have never ceased to insist on the necessity of her complete purification, in all respects, by the removal of every article of ballast and stores preparatory to fumigation with charcoal fires, white-washing, &c.

This was at last effected, when her hold was found to be in such a state of fermentation and impurity from foul ballast, that a candle would not burn in it, and the stoutest negroes fell down at the work.

A few years afterwards. another ship of the same class, (the *Narcissus*, I believe, but I forget the name), underwent the same mortality, under exactly the same circumstances, as reported upon by Staff-Surgeon Hartle, from Antigua ; and a little more than a year before the arrival of the *Childers*, the *Regalia* transport, as reported upon by myself, suffered nearly as much from having stowed on board a cargo of green wood on the coast of Africa.

In this way, then, may we account for particular ships of a fleet, and particular parts of these ships, being ravaged by fever, while all the rest are free ; for at the very time the *Childers* thus came into harbour at Barbadoes, the *Scamander* frigate also arrived with a fatal yellow fever pervading the midshipman's berth alone, four of these young gentlemen having died in a very short time, without affecting a single other individual except the assistant surgeon in the same berth, and a ship boy.

infection of *fomites* alone,* (allowing that the qualities of atmosphere can be so denominated), incapable of transportation as a personal contagion, and requires the aid of its own contaminated atmosphere before it can be diffused as an epidemic disease; for it would otherwise open the widest outlet, and constitute the severest drain upon human life.†

I assume, then, for reasons which I shall now farther illustrate, that endemic typhus fever is not essentially an infectious disease; that it may be approached at all times with impunity under ordinary circumstances of ventilation and personal purity; and that where those are observed, it cannot be carried or transported by any sick, however ill, so as to affect others in a different locality. To say that it has often spread to other inhabitants of the same locality or dwelling even, if it be incapable of transportation, does not constitute a contagion. It only amounts to a disease of locality, very frequently remittent or catarrhal fever, sublimed into typhus through neglect or improper treatment; and even should it infect visitors who choose to place themselves within its influence, upon the same ground, that would be no proof of contagion, unless those visitors could also carry the infection so as to communicate it to others upon different ground at a distance; for to talk of contagion limited to one spot, is surely only saying that

* The question of time in regard to the retention of infection by unpurified *fomites*, is a most important one. I think it may fairly be presumed, that the infection will adhere to saturated wollen clothing and other absorbent substances, as long as the dried matter of small-pox can retain the powers and qualities of an inoculator.

† Gratitude and respect for the author of the Essay on Yellow Fever, that splendid specimen of philosophic induction and freedom of inquiry, which dissipated at once the prejudices of a century, would make me diffident and cautious how I impugned opinions so well advocated and ably supported as his. But, *magis amica veritas*; the experience of my life has so strongly impressed me with the contrary, and I esteem the truth of so much importance to the best interests of humanity, that, averse as I am even to friendly controversy, I have not hesitated, for the sake of the object, to enter its lists with a powerful antagonist, relying upon his tolerance and candour for a reconsideration of the subject, and the indulgence of a liberal mind to those who differ from him, on the open public ground of medical inquiry and sanatory research.

the spot of ground, and not the person of the patient, must be the source of the disease.*

In this transportability resides the very touchstone and answer to the question of contagion. To suppose that a patient, infectious in his person, can only give out disease in a particular atmosphere and place, would be like what we have all read in the early lessons of our childhood, where an individual performs a prodigious leap in the island of Rhodes, but could not possibly be made to do it anywhere else. With equal justice may we assert that our contagious exanthemata can only become diffusible under similar circumstances, or that the infections of syphilis and scabies are influenced by the laws of atmosphere and locality. In regard to variola, the chief of those exanthemata, we may with more reason draw the direct contrary inference; for, previously to the discovery of the vaccine preventive, it used to be during the finest weather of the season that our babes, when carried out in arms, were struck and blighted by the disease, from passing even momentarily to leeward of an infected subject. Nor is it unreasonable to believe, that the very purity of the atmosphere actually contributed to the efficacy and surety of the infection; since then the contagion would be less adulterated and diluted with

* This point has been well and ably illustrated by Dr. Elliotson, of St. Thomas's Hospital, in his published lectures; and every attentive observer must have noted manifold instances of the same. One of these that occurred in the summer of 1830, was so remarkable as to induce me to call to it the attention of the Medical Society of Windsor. In one of our foulest lanes, close by the river side, a patient of the Dispensary was taken with typhus fever, so strikingly marked in all its features, character, and history, that it could not possibly be mistaken. In the small close room that he inhabited, seven others of all ages slept; and when the apartment was shut up at night, its atmosphere was literally intolerable to a visitor from the open air; yet not one of these seven took the fever,—while another case exactly similar occurred within two doors, and dropping cases of the same were dotted up and down the neighbourhood, without ever proving infectious in the same house. I account for the escape of the inmates of the first, from the disease occurring in June, then the driest season of the year, admitting the freest ventilation through the day, and permitting exit from the apartment to all at the earliest of the morning. Had this fever made invasion in the winter season, when the same ventilation and purity must evidently have been impossible, I cannot doubt but its accumulated *fomites* would have proved virulently contagious.

moisture, or other extraneous matter. No one would so dilute and obtund the actual variolous fluid (if a fluid) before proceeding to inoculation; and the contagious vapour can be nothing else than the same material under a gaseous form.

That other form of typhus fever, which I may call factitious, (as being created by ourselves out of causes over which we ought to have exerted due control,) to distinguish it from the endemic, which we cannot prevent, must also be contagious under the same circumstances. Here, however, I believe, in like manner, that the person of the patient, independent of *fomites*, never gives out at any one time a sufficiency of the typhoid poison to affect another healthy person; that the poison can only be made effective through contamination of atmosphere, under long-continued accumulation of morbid effluvia; and in fine, that the atmosphere of the patient is infectious, and not his person, which, if once cleansed and purified, and ventilation restored, may be approached, however ill he may be, with perfect impunity. In this belief I feel warranted, from the knowledge of several important facts, of a character so general as to warrant the greatest confidence in their application. 1st, The Bristol Hospital, for a great many years, has received typhus fevers into its well-disciplined wards, without having ever spread the disease even to the most contiguous beds. 2d, Several of the great hospitals in London have followed the same example with the same results. 3d, The most pestilentially dangerous fevers to approach when single, in the confined dwellings of the poor, have almost everywhere been found devoid of every infectious principle when collected together in numbers, and confined by the hundred within the walls of a well-regulated fever hospital. Upon this point the question of contagion must turn; for, if the evidence here given be not impugned, it will be impossible in human testimony to adduce anything more decisive and conclusive. Reasoning from single individual instances will generally deceive; but well-digested impartial observation upon masses of men can never lead to an erroneous conclusion.*

* The author alludes here to what he witnessed more especially at Liverpool, when on the staff of the north-west district, in the year 1804. Typhus fever had,

While I thus, however, express my conviction of typhus fever never being a true essential contagion under any type, I must allow the question to be in some degree open to discussion, in regard to that (type) form which has an animal origin, and may justly be called an animal poison. The evidence of the great hospitals just alluded to would imply a negative ; but it remains to be proved whether that belief may not have been founded on endemic typhus only, without experience of the other form of the disease. Thanks to our improved prison-discipline, such cases must now be rare. But when they existed in former times, the Black Assizes at Oxford, the Old Bailey Sessions, and other Sessions in Ireland and elsewhere, recorded in the different medical journals, would give fearful proof of its dreadful powers. I acknowledge, too, that the infection of hospital gangrene is a transportable and inoculable contagion, as applied to other ulcers, and that puerperal fever, another local modification of typhus, may be carried from house to house in any locality. With regard to the jail fever above alluded to, however, my own belief leads me to the conclusion, that the contagion resided in the woollen clothing of the prisoners in the dock, from whence it is stated that a stream of air from an open window blew directly upon the court ; and that, had they been furnished with fresh clothing, and their bodies purified before being placed there, the closest proximity or actual contact would have produced no disease whatever.

This belief I ground on the fact, that woollen covering of any kind is as open and as prone to absorb, as it is tenacious to hold in accumulation every species of animal exhalation ; and the records of our press-gangs and prisons will show, that men would, in those days, be introduced into our fleets and armies, who for months together had never once had their clothing changed by night or by day. And this leads to another consideration of mighty import in the history and consideration of disease ; for it would seem that these men had not themselves at the time the dreadful distemper

up to that time, proved a most virulent and dangerous contagion to the medical faculty visiting the poor in the lower part of the town, who lived for the most part in cellars or other wretched dwellings : but on the building of an excellent Fever Hospital its character there as a contagious disease altogether ceased.

which they communicated with such fatal effect to the Court that tried them. That they had it not at the time I can fully credit; but that they were about to fall into it, and that, too, under its worst form, may be fairly presumed.

This proposition is not paradoxical; for it has been verified, and may be seen every autumn, in all the aguish districts of our own country, that the actual inhabitant of the swamp itself, immersed night and day in a sea of malaria, is never so liable to fall under its influence as his neighbour on the dry rocky brow of the hill immediately above the marsh; thereby proving that the continuous application of a morbid power from without so deadens the nervous energy, that it becomes incapable of assuming the reaction and resistance which would be necessary to throw it off, under the form which nature has decreed, of acute disease. The release from the deeply infected cells of a prison to the pure open air,* would seem to restore this power to the prisoner, in the same

* It is familiarly known, that the inhabitants of the malarious districts of Lincolnshire, who never had the ague there, are certainly struck with it on removing to Yorkshire, or other healthy hilly country.

In my inspection report of the Island of Trinidad, dated March, 1816, I find the West India Rangers—a corps composed of deserters and military criminals—described “as generally labouring under cachectic hydropic debility, like the advanced stages of *mal d'estomac* (dirt-eating) of negroes, or chlorosis in women, without distinct type of disease, and consequently without light to understand the case, or guide to apply a remedy. This form of illness, which, in the worst and most incurable cases, appears without preceding fever as an original primary disease, sapping the powers of life and animal energies through some silent inexpressible operation, is so common to the marshy unwholesome districts of Trinidad, at some distance from the sea coast, that it has been called by the military the Trinidad disease. I believe it proceeds from the action of the latent marsh poison on the constitutions of those who have become so debilitated by long exposure to its malignant blighting influences, as to be incapable of assuming the forms of regular fever, or the powers and chances of throwing it off, by the channel which nature has decreed, of acute disease.

“The European medical officer, if he has been conversant with intermittent fevers and their *sequelæ* in colder latitudes, would, in viewing the ranks of a Trinidad corps, pronounce them to be generally affected with *splenitis* in its different stages, many of them in its last, so remarkable is the tallowy bloated appearance of the countenance, the lividity of the lips, and pearly whiteness of the eye; and it is with surprise he finds, on dissection, that the abdominal viscera are seldom more than secondarily affected, that the thorax is the principal seat of

way that the inhabitants of the hill, in a swampy country, from breathing alternately the wholesome air of Heaven, with the noxious vapours from below, always retains it, and leads the superficial observer to the fallacious conclusion of dry rocky ground being more pestiferous than the bed of the fen itself. But how different is the true state of the case. The dweller in the locality below may, it is true, exhibit no acute disease; but every organ is disordered;—he has no health in any way, and is certainly destined to an early grave; while the other, although he may have imbibed the poison in its fullest dose, still possesses the power to throw it off, by an effort of his constitution, however dangerous and painful. He may, through such an ordeal, be restored to pristine health and vigour. With his benumbed neighbour, unless he removes from the marsh, it is impossible. He has been struck to the vitals, and must succumb to his fate. This is not imaginary, nor am I speaking of what I have not seen and examined. In many of the malarious districts of Spain, old age, among the resident inhabitants, was unknown. On the marshy banks of the great Guiana rivers, at some distance from the sea, and in the central

disease, where the heart is found to be enlarged, pale, flaccid, inelastic, covered with fat, and swimming in a pericardium filled with dropsical effusion. Under these circumstances, where the ill-prepared arterial blood, deprived of its red particles, can communicate neither density nor energy to the muscular fibre, though the miserable sufferers may often live a long time, they are unfit, even in the early stages of their illness, to make any active exertion. The first time I saw the West India rangers march in quick time round the garrison parade of Barbadoes, where they had been called, after a long residence in Trinidad, to accompany the expedition against Guadaloupe, they staggered, dropped, and fell by dozens out of the ranks, like men under a murderous fire of musketry. Fifty of them were on the ground before they had made a single round (little more than a mile), whose quivering lips, and ghastly looks, and hurried breathing, presented a striking image of the mortally wounded." An inspection was immediately ordered, and a large proportion of the men was left behind; but the remainder, when they came to land in Guadaloupe, were found to be quite unfit, as a corps, for their own light service of the woods and mountains, so generally were they affected in the manner just described. My friend Dr. M'Cabe, now of Cheltenham, then surgeon of the York rangers at St. Joseph's, upon the great eastern marsh, Trinidad, who was most indefatigable in his researches and dissections, I consider to be better qualified, from the opportunities he then enjoyed, than any other observer, to give useful information upon this mysterious manifestation of the marsh poison.

districts of Trinidad, presenting as concentrated a body of swamp as any in the world, our soldiers died by hundreds, blighted and withered, without ever showing a paroxysm of fever; and it is even recorded by Dr. Gregory of Edinburgh, in his lectures, that in a most unwholesome locality of the Southern United States of America, of which, at the distance of forty years, I now forget the name, no native inhabitant constantly residing, ever attained the age of 21 years. I have been led into this digression from my desire to prove the possibility of the most intense existence of a cause, without a visible symbol of effect, as in the case of the prisoners of the Old Bailey, and the inhabitants of a deeply malarious country.

It has been said that typhoid contagious fevers never prevail even in the most crowded slave ships; and I believe the statement; because the heat to which the inmates are subjected in these climates is unfavourable to the generation of contagion, or rather is sure to dissipate it, even under the most limited ventilation; and the poor creatures, being in a state of utter nakedness, are saved thereby from the accumulation of the infectious principle, to the communicable degree under the form of *fomites*. The exemption of the Greenlanders, the Esquimaux, and the Kamschatkadales, if true, is not so easily explained; for though the dry cold of the arctic winter may be incompatible with the development of the contagious principle, it ought to be unloosened and spring into activity with the melting of the snows, and the moisture of their short-lived summer weather. There may, however, be circumstances in the savage life and idiosyncrasy of the natives unfavourable to the existence of typhus fever, which a better acquaintance with their habits may hereafter elucidate. At present it is an anomaly, which might be explained on the assumption that the infection had never been introduced amongst them; but even this, were it true, could never account for its non-generation, under circumstances more favourable to the first explosion of the disease than ever occur amongst civilized nations, supplied with the means, and endued with the knowledge to preserve themselves.

A better explanation than this would seem to offer itself in the

absence of the depressing passions—those powerful emasculators of human energy—which are unknown in the savage life, or at least are never felt after the grosser animal wants have been supplied. All that is comprehended under the French word *MORALE* has amongst them no existence; nor can its all-pervading influence be called into action so far as to affect their bodily health. Few, I believe, have ever seen an insane negro, even under the most cruel slavery, and fewer still an insane Indian in his native woods. With idiopathic fever, then, they may be said to have little or nothing to do, which, as distinguished from the sympathetic fever of wounds and inflammation, is unknown amongst the lower animals, and would appear to be a characteristic contingency of our more perfect organization—nay, more, to be a product of civilization—of those superior attributes and functions of the brain, with which the lower animals have not been gifted, and which man, when little removed above that state, never exercises.*

There is still another principle bearing resemblance to contagion, and affecting the health of masses or bodies of men, of which, as it acts upon the fluctuating bases of moral and mental agencies, it is difficult to give any intelligible account. The health of a ship's company, for instance, or a corps of troops, when the *morale* is good, the discipline strict but kind, and the confidence of the men assured, will often be found firm in the midst of endemic and epidemic diseases; and plague and pestilence seem to pass them harmless until the introduction of unseasoned† recruits, even though healthy at the time,—a change of system, or some other cause, makes a break into the general health; and then will the whole rush into disease with a proclivity of current fully as remarkable as the preceding immunity. It would be ridiculous to say that this can be similar to what we often witness in *Chorea*

* At a meeting of the Academy of Medicine, on the decline of *cholera morbus* in Paris, the celebrated Esquirol reported the fact, of the lunatic patients of the Charenton having been altogether exempted from the epidemic; and further, that it had not been communicated, in a single instance, to any patient of the other lunatic receptacles of that capital.—Vide London Medical and Surgical Journal, May 19th.

† The venerable Sir Gilbert Blane has noted and well illustrated this fact many years ago, in his excellent work upon the diseases of seamen.

Sancti Viti, or the imitative hysteria of girls, or the familiar acts of yawning, stuttering, &c. Yet it may be akin in a certain sense ; since all our sympathies are contagious, as the word itself implies ; and when the protecting shield has been removed, these seize the reins, and guide the man without restraint. So fully, indeed, do they possess him, that when his mind is impressed with the dread of impending pestilence, his ordinary diseases, it is well known, will be suspended, and, when it actually arrives, will be merged into the vortex of the new epidemic. Farther than this, the ascertained laws of incubation will so far be set at nought, that a terrified patient will not only fix the precise moment of infection, but will actually sicken prematurely with small-pox (a latent infection must of course have been previously received), through the spectacle of the disease in the person of another, or through the disgust (and nothing worse) of an excremental smell, strongly affecting his alarmed imagination ; or through the same impression he may fall down the victim of an impossible contagion, like that of yellow fever. In the face of the obvious fact, that children who have no imaginary fears, nevertheless partake largely in every spreading sickness, I would advance nothing so absurd as, that mental impressions are contagion, or can produce specific diseases. But in those general affections, such as idiopathic fevers, where the brain and nervous system, instead of being the agents, are so often the subjects of the proximate cause, I cannot doubt that they eminently predispose to the explosion, and influence the current of every epidemic.

Before dismissing this part of the subject, a most important consideration still demands our attention, and that is, whether any species of aërial invisible contagion can be given out, and communicated to the living after the death of the patient. My own belief, for which I have already stated reasons in a published paper, is, that it must be impossible. I am aware that various writers worthy of the highest credit have attributed this property of contagion after death to a disease I have never seen—the plague ; and I know well that the infection which resides in the grosser demonstrable matter of small-pox may be carried after death beyond the parent body round the world, without losing its

original powers,—that for as long as it remains a *depôt* and *fomes* upon the surface of a corpse, it may be sublimed from it, and infect others either through means of a current of air, or through the heat of atmospheric temperature, or through the heat generated in the process of putrefaction; and I have little doubt of the same being an inherent quality of other exanthematous diseases, that were contagious before death, provided there be left any evaporable deposition or crust upon the skin. But in regard to plague, I would feel disposed to deny it altogether, unless upon the ground that matter had been formed on its characteristic plague spots, as they are called, or critical abscesses near the surface; and then I would acknowledge that their contents might be sublimed from the same causes, and by the same means as from the pustules of small-pox, the matter of which, encased in its own porous capsules, fully formed and complete as a material, is preserved in the most fitting state possible, for being diffused around, whenever acted upon by any of the above-mentioned agencies. This cannot be the case in regard to the gaseous aërial contagions, where no material is discoverable, and where the very small portion that can possibly be condensed upon the corpse after death, must be so insignificant, when compared with the supply that was constantly furnished by trying elaboration, as to make it almost impossible that it could constitute a focus of infection.* I shall now con-

* Were it allowable to laugh on such a subject, the temptation would be found in the late regulations for the burial of the dead, during the recent visitation of epidemic cholera. In the north they were hurried to their unhallowed grave before the vital heat was extinguished, and in some instances, it is reported, before the breath was out of the body; but in London, the Irish labourers beat off the police, and waked the corpse on successive nights, with pipes and whiskey. I confess, that in as far as my own personal safety was concerned (supposing it to have been an infectious disease), I should greatly have preferred joining the latter party, for the waking, I understand, never begins till the corpse is cold, and, in the recently dead from cholera, the heat is said not only to linger in, but actually, through some strange mysterious operation, to return to the body after death (*vide Lancet*), causing infection to rise from it (if any ever existed) at the very time chosen for the ceremony of inhumation. Like the suicide and the worst of criminals, the dead were every where debarred the rights of sepulture in consecrated ground, to become, as invariably happened, the immediate booty of the body-snatcher and the dissecting rooms; and this cruel outrage upon the feelings of the dying, and grosser viola-

clude with some observations upon the contagion of typhus fever and contagion generally.

Could we establish the point, that this febrile contagion, unlike the poisonous leaven of the variolous fluid, or the venomous fluid of the viper's tooth, which on the reception of a particle contaminates the whole mass, is an infection of accumulation and quantity alone, we shall have attained a degree of security of nearly equal importance to mankind as the discovery of inoculation, or the vaccine preventive itself; for then, instead of man constantly generating a poison which would eventually be fatal to his race, the typhoid virus, without any great stretch of fancy, may almost be taken for the monitor of his life, and preserver of his existence in its due integrity; because that accumulation and quantity, to the degree that can constitute a contagion, being incompatible with the wholesome decencies of life, ought to find no toleration in civilized communities, and may always be obviated by the simplest precautions of domestic police. When these are neglected, the powers of mind and body bestowed by the Creator languish, and are deteriorated, like unhealthy plants deprived of their nourishment in a deficient soil, or of the air and light necessary to their well being; for it has been wisely ordained, that man shall use his faculties to uphold and improve the station that has been assigned to him; and the behests of Providence can never be despised without incurring the appropriate penalty in the diseases that afflict him, and the various plagues that beset his life. It will be vain for him, and his rulers more especially, to plead contagion as a predicament from which they could not

tion of the rights of the living, was, if not encouraged, too seldom opposed, as it ought to have been, by the medical profession. In politics, it has often been reckoned good to frighten the people, and despotic power has ever found its best ally in superstitious fear;—but medical science ought to spurn the base connexion, and should never have been seen in the ranks of time-serving panic and superstition. To have aided in such a delusion can admit of no excuse; for its abettors, before they consented, must have forgotten, if they did not wilfully shut their eyes on the evidence of every dissecting-room in Europe, which have never become receptacles of contagion, with the exception of, I believe, the small-pox, nor have their purveyors, the resurrection-men, ever fallen the victims of their nefarious trade.

escape; for that very contagion is part of their fault, being nine times in ten the work of their own creation, through default of humanity, and in consequence of their crimes. Wherever good government prevails, the worst contagion that ever appalled an hospital may be dissipated by the simple separation of the inmates; and the most saturated lazar that ever came out of a pest-house may be disinfected in the burning of a basket of charcoal, putting to flight at once by this simple process the ill-omened hosts of quarantine throughout every nation, with all their vexatious machinery of imprisonment, fumigation, and delay. Too long has contagion been resorted to as the word of refuge and of fear, which, by the word alone, constantly making its own work, has slain its thousands, while it has served to hide our ignorance of what we cannot know—to clothe the medical professor with undue influence over his patient—and to exhibit himself in the unmerited character of a preserver endued with courage to confront, and skill to disarm, the unseen destroyer. Even before he can possibly have become habituated to the presumed *infectious* influences of a new epidemic by the necessity of exposure, he walks harmless amidst the pestilence, as if a miracle had been wrought in his favour; for without such a miracle he could not be saved, and never, in fact, is saved when true infection exists; the first and surest proof of its presence every where being the seizure in its worst form of the medical attendants, (in some visitations of the true plague they have actually been extirpated,) and wherever they escape in any thing like proportionate numbers to the rest of the community, the people need have no fear of contagion.*

* Besides, this argument of habituation cuts both ways, for many escape on first exposure and short visits to the sick, who are certainly infected by repeated and longer continued ones. Thus, on the disastrous retreat of the British army through Holland in the winter of 1794, few indeed of the medical staff escaped the typhoid contagion in our then most miserably conducted hospitals, before the retreat was finished; and subsequently, under a better organization on the retreat from Talavera to the confines of Portugal, when the hospitals became inevitably crowded to overflowing, it was seen that the best seasoned of the medical staff were the principal sufferers.

Thus, too, during the late visitation of epidemic cholera at St. Petersburg, when, during the first weeks of its prevalence, 25 out of 224 medical men there

The ancients* knew not what it was, and it may be fairly questioned whether greater misery and danger has not been inflicted upon mankind through the superstitious dread of the imaginary evil, than security derived against the true contagions, from our improved, but still imperfect, knowledge. That knowledge, when perverted, has been found capable of most pernicious application in almost every country; and when obscured by panic, has led to the wildest inroads upon the peace and welfare of society.

The most simple diseases, and the most innocuous in respect to the community, have been proclaimed for contagious by the best

were taken with the disease,—the British mission sent out by our government could not, in the first instance, while this was going on, justly come to any other conclusion than that it was a contagious pestilence, and, had the result been the same, or any thing like the same, in other places, the fact of its being a true contagion could not have been doubted by any candid unprejudiced observer. It has, however, been so decidedly negatived at Moscow, Warsaw, Sunderland, London, and indeed everywhere else, as to show that the occurrence in the Russian capital must either have been a matter of pure chance, or, what is far more likely, the effect of prepossession in an ultra-contagion creed, strongly predisposing its disciples to be affected with an epidemic disease in the same way as the British troops in Cadiz, when terrified by their own surgeons preaching contagion, became the victims of yellow fever, or resisted it when assured and made confident under a better and truer belief. The assertion then so often made by the most influential writers, that a single case of disease making its appearance after undoubted communication with another labouring under the same, must establish the truth and fact of contagion so clearly as to render of no avail all that the anti-contagionists can advance to the contrary, is surely unworthy of men habituated to anything like exactness of reasoning. Take, for instance, the diseases of a malarious district, such as endemic fevers, or those of the camp, such as dysentery, or the ordinary non-contagious epidemics of any populous country, there must, of necessity, be every kind and degree of communication that can be imagined, and yet, with as many undeniable instances of it as can be desired, who would now venture to say that all these maladies are propagated by contagion? I am aware that not very long ago contagion was taken for granted in almost every disease, by the wisest and most learned of the faculty; but subsequent experience has opened the eyes of all impartial observers to better views of the case. It was then the creed of the times, and through the remains of that creed, and in default of experience, it is to be feared that society will still be subjected to groundless alarm on the appearance of every new epidemic.

* I speak here only of the ancient physicians, from Hippocrates to Celsus; for I cannot acknowledge the authority of the poets, nor even that of the historians, if unsupported by the physicians, in a medical paper.

physicians of the last century ; and little more than thirty years ago, my own preceptor at St. Thomas's Hospital, Dr. George Fordyce, the most enlightened philosophic physician of his age, taught that ague was an infectious disease. Many still believe in the infection of phthisis pulmonalis, and propagate that belief to the no small terror and disquiet of those families, where, unhappily, that deadly taint is hereditary. There are even countries of Europe where the victims of this disease, so often the young and the lovely, while standing on the brink of an untimely grave, instead of being cherished in the bosom of their families, are shut out from human intercourse, and debarred the solace of society, through terror of its contagious nature. So firmly rooted is this belief, that even after death the habitation where the ill-used victim has dwelt is declared unapproachable till it has been exorcised, as if it had been the abode of a demon—the bedding and clothes of the deceased committed to the flames, and the walls expurgated. No native physician dares to question the propriety of these measures. It is an article of the medical creed, taught in the authorized schools, sanctioned by the church, and confirmed by the people ; and the heretic practitioner who might dare to question its truth, would meet about the same degree of toleration as if he had questioned the dogmata of the true Catholic faith.

In regard to phthisis pulmonalis in this country, I may at least say, that those who act the part of the Spanish and Italian physician here, cannot have given the subject any thing like due consideration ; for unprejudiced reflection would surely show them that the presence of the contagious principle, even in a limited degree, would, in this country at least, seriously affect the continuance of the human race. Let us suppose that the disease were now for the first time introduced to the British isles. Its course, however deadly in the end, unlike that of a transient acute disease, is slow and gradual, enduring for months, even for years, during which lengthened period its victims, deeply affected, continue until the last stages to frequent the haunts of society, to form part of our public meetings in churches and other assemblies. We inspire their breath, and touch their bodies. Under these circumstances, a single patient would spread the infection through a

whole community—the community a district, and a district the entire kingdom ; so that in a few years the British nation generally, and through them the rest of the world, would certainly be infected with an incurable fatal disease. To assume that predisposition is contagion, cannot surely be warranted by any stretch of reasoning ; nor in the cases where the surviving members of a consumptive family succumb in succession under the connate vitiation, because exhausted by watching, and overpowered by terror and grief,—will it do to say, while all the other attendants so uniformly escape, that they must have been infected from the proximity of their dying relative.*

* In this paper the words contagion and infection have again been used as precisely synonymous terms. I cannot help knowing that they ought to bear a different import, but the significations given to them through conventional usage have been so various, and have led to so much confusion, that to avoid misunderstanding I have adopted them for the same.

MARSH POISON*.

IN this paper I propose submitting to the Society some observations on the nature and history of the Marsh Poison, which, under the title of Marsh Miasmata, or Malaria, has ever been acknowledged as the undisputed source of Intermittent Fevers, and is believed, with good reason, to be the exciting cause of the whole tribe of Remittent Fevers ;—of Endemic Fever, in fact, in every form, and in every part of the world.

All authors who have treated of the nature of this poison (and they are most numerous), coincide in attributing its deleterious influence to the agency of vegetable or aqueous putrefaction. So universal a coincidence has caused these opinions to be received with the authority of an established creed. It is my intention in this paper to shew, from a narrative of facts, that they are *unfounded*, and that putrefaction, under any sensible or discoverable form, is *not* essential to the production of pestiferous miasmata.

The marsh poison, happily so little known in this country and the colder regions of the earth, is notwithstanding by far the most frequent and destructive source of fever to the human race, as that form of fever to which it gives rise rages throughout the world wherever a marshy surface has been exposed for a sufficient length of time to the action of a powerful sun. I have said for a sufficient length of time; because, as will presently be seen, the marsh must cease to be a marsh, in the common acceptation of the word, and the sensible putrefaction of water and vegetables must alike be impossible, before its surface can become deleterious. It will also be seen, that a healthy condition of soil, in these pestiferous

* From the Transactions of the Royal Society of Edinburgh. (Read January 3 and 17, 1820.)

regions, is infallibly regained by the restoration of the marshy surface in its utmost vigour of vegetable growth and decay. The previous marshy surface, or rather the previous abundance of water, is, however, an indispensable requisite preliminary, in all situations, to the production and evolvment of the marsh poison. A short review of the circumstances, which, under my own observation, attended our armies on service during the last war, will, I hope, render these seemingly paradoxical opinions intelligible to the Society.

The first time that I saw endemic fever, under the intermittent and remittent forms, become epidemic in an army, was in the year 1794, when, after a very hot and dry summer, our troops, in the month of August, took up the encampments of Rosendaal and Oosterhout, in South Holland. The soil in both places was a level plain of sand, with perfectly dry surface, where no vegetation existed, or *could* exist, but stunted heath plants: on digging, it was universally found to be percolated with water to within a few inches of the surface, which, so far from being at all putrid, was perfectly potable in all the wells of the camp. I returned to Holland in the year 1799, with the army under the command of the Duke of York, which remained the whole autumnal season in the most pestiferous portion of that unhealthy country, without its suffering in any remarkable degree from endemic fever. Dysentery was almost the only serious disease they encountered. Remittent fever was nearly unknown, and intermittent occurred very rarely; but the preceding summer season had been wet and cold to an unexampled degree; during the whole of the service we had constant rains, and the whole country was one continuous swamp, being nearly flooded with water. In the year 1810, a British army at Walcheren, on a soil as similar as possible, and certainly not more pestiferous, but under the different circumstances of a hot and dry preceding summer, instead of a wet and cold one, suffered from the endemic fever of the country to a degree that was nearly unprecedented in the annals of warfare.

As I intend, in another part of this paper, to treat fully of the nature of the localities in the West Indies, I shall pass over at present my next experience of endemic fever during three years'

service in the Island of St. Domingo, and proceed to state what I observed on this subject in Portugal and Spain. In the course of the Peninsular War, during the autumnal campaign of 1808, our troops, after the battle of Vimiera, were comparatively healthy. The soil of the province around Lisbon, where they were quartered, is a very healthy one (a slight covering of light sandy soil on a substratum of hard rock, which is almost always so bare that water can seldom be absorbed into it to any depth, but it is held up to speedy evaporation). The season was fully as hot a one as is ordinarily seen in that country, but dysentery was the prevailing disease. Early in 1809 the army advanced to Oporto, for the expulsion of the French under Marshal Soult from Portugal, which, during a very cold and wet month of May (for that country), they effected, without suffering any diseases but the ordinary ones of the bivouac; and in June advanced again towards Spain in a healthy condition, during very hot weather. The army was still healthy, certainly without endemic fever, and marching through a singularly dry rocky country, of considerable elevation, on the confines of Portugal. The weather had been so hot for several weeks as to dry up the mountain streams; and in some of the hilly ravines, that had lately been water-courses, several of the regiments took up their bivouac, for the sake of being near the stagnant pools of water that were still left amongst the rocks. The staff officers, who had served in the Mediterranean, pointed out the dangerous nature of such an encampment; but as its immediate site, amongst dry rocks, appeared to be quite unexceptionable, and the pools of water in the neighbourhood perfectly pure, it was not changed. Several of the men were seized with violent remittent fever before they could move from the bivouac the following morning; and that type of fever, the first that had been seen on the march, continued to affect that portion of the troops exclusively for a considerable time. Till then it had always been believed amongst us, that vegetable putrefaction (the humid decay of vegetables) was essential to the production of pestiferous miasmata; but, in the instance of the half-dried ravine before us, from the stony bed of which (as soil never could lie for the torrents) the very existence even of vegetation was impossible, it it proved as pestiferous as the bed of a fen. The army advanced

to Talavera through a very dry country, and in the hottest weather fought that celebrated battle, which was followed by a retreat into the plains of Estremadura, along the course of the Guadiana river, at a time when the country was so arid and dry, for want of rain, that the Guadiana itself, and all the smaller streams, had in fact *ceased to be streams*, and were no more than *lines of detached pools* in the courses that had formerly been rivers ; and there they suffered from remittent fevers of such destructive malignity, that the enemy and all Europe believed that the British host was extirpated ; and the superstitious natives, though sickly themselves, unable to account for disease of such uncommon type amongst the strangers, declared they had all been poisoned by eating the mushrooms (a species of food they hold in abhorrence) which sprung up after the first autumnal rains, about the time the epidemic had attained its height. The aggravated cases of the disease differed little or nothing from the worst yellow fevers of the West Indies ; and in all the subsequent campaigns of the Peninsula, the same results uniformly followed, whenever, during the hot seasons, any portion of the army was obliged to occupy the arid encampments of the level country, which at all other times were healthy, or at least unproductive of endemic fever.

To save further narrative, I shall finish this part of the subject, by adducing some topographical illustrations.

The bare hilly country, near Lisbon, where the foundation of the soil, and of the beds of the streams, is rock, with free open water-courses amongst the hills, as I have said before, is a very healthy one ; but the Alentejo land, on the other side of the Tagus, though as dry superficially, being perfectly flat and sandy, is as much the reverse as it is possible to conceive. The breadth of the river, which at Lisbon does not exceed two miles, is all that separates the healthy from the unhealthy region ; and the villages or hamlets that have been placed along the southern bank of the Tagus, for the sake of the navigation, are most pestiferous abodes. The sickly track, however, is not confined to the immediate shore of the river. Salvaterra, for example, about a mile inland, is a large village, and royal hunting residence in the Alentejo, which is always reputed to be very healthy till the beginning of the autumnal season, when every person who has the means of making

his escape flies the place. In their superstitious fear, the inhabitants declare, that even the horses and other animals would be seized with fever if left behind, and therefore they always remove the Royal stud. The country around is perfectly open, though very low, and flooded with water during the whole of the rainy season; but at the time of the periodical sickness it is always most distressingly dry; and exactly in proportion to the previous drought, and consequent dryness of soil, is the *quantum* of sickness. I have visited it upon these occasions, and found it the most parched spot I have ever seen; the houses of the miserable people that were left behind being literally buried in loose dry sand, that obstructed the doors and windows.

Civdad Rodrigo affords another illustration of the same. It is situated on a rocky bank of the river Agueda, a remarkably clean stream; but the approach to it on the side of Portugal is through a bare hollow country, that has been likened to the dried up bed of an extensive lake; and upon more than one occasion, when this low land, after having been flooded in the rainy season, had become as dry as a brick-ground, with the vegetation utterly burned up, there arose fevers to our troops, which for malignity of type could only be matched by those before mentioned on the Guadiana.

At the town of Corea, in Spanish Estremadura, not very dissimilarly situated, on the banks of the Alagon (also a very pure and limpid stream) our troops experienced similar results; with this addition clearly demonstrated, that no spot of the pestiferous savannah below the town was so much to be dreaded as the immediate shores of the river; so that even the running stream itself, which in all other countries has been esteemed a source of health, and delight and utility, in these malarious lands proved only an addition to the endemic pestilence. It is difficult to conceive any thing more deceptive than the appearance of these two towns, particularly the last, which might have been pitched upon by the best-instructed medical officer, if unacquainted with the nature of malaria, as a place of refuge from disease; for the shores of the river, (it had no confining banks) seemed perfectly dry, and there was not an aquatic weed, nor a speck, nor a

line of marsh, to be seen within *miles* of the town, nor any thing but dry, bare, and clean savannah. It had, however, been so far the contrary in all past times, that the canons and ecclesiastics of the ancient cathedral had a dispensation from the Pope, of no less than five months' leave of absence, to avoid the Calentura, (their name for the endemic fever). In the other ecclesiastical residences of Estremadura, the same dispensation rarely extended beyond *three* months, but almost all had some indulgence of the kind. During the autumnal season, the epidemic prevailed so generally amongst all classes of the inhabitants, that even infants at the breast were affected with it, and few of the residents attained to any thing like old age. The oldest person I ever saw in Corea, who was a priest, that had often taken advantage of the dispensation for leave of absence, was only in his 57th year, and he appeared like a man past 70. The inhabitants, nevertheless, seemed always surprised and offended when we condoled with them on the unhealthiness of their country, which they would not admit in any degree; for with them, as every where else, where immemorial experience has shown that it is impossible to avoid a calamity, it goes for nothing. They contemplated its approach with the same indifference that a Turk does the plague, and patiently awaited its extinction by the periodical rains of the winter season; not, however, without some exultation, and self-congratulation, on the greater comparative mortality that occurred amongst the stranger soldiers than amongst themselves.

From all the foregoing, it will be seen, that in the most unhealthy parts of Spain, we may in vain, towards the close of the summer, look for lakes, marshes, ditches, pools, or even vegetation. Spain, generally speaking, is then, though as prolific of endemic fever as Walcheren, beyond all doubt one of the driest countries in Europe, and it is not till it has again been made one of the wettest, by the periodical rains, with its vegetation and aquatic weeds restored, that it can be called healthy, or even habitable, with any degree of safety.

During the years 1815, 1816, and 1817, I was employed in making a topographical health survey of all the West India colonies, which afforded me opportunities, in that diversified, dan-

gerous, and active climate, of improving the observations I had elsewhere made upon pestiferous miasmata, of a kind that I could scarcely have anticipated.

It might *there* be seen, that the same deep marshy country which the rains made perfectly healthy, as if by deluging a dry well, was speedily converted, under the drying process of a vertical sun, into a hot-bed of pestiferous miasmata. Thus, in the Island of St. Lucia, the most unwholesome town of Castries, at the bottom of the Carenage, which is altogether embosomed in a deep mangrove fen, became perfectly healthy under the periodical rains; while the garrison, on the Hill of Morne Fortuné, immediately above it, within half cannon-shot, began to be affected with remittent fevers. The two localities within this short distance evidently changed places in respect to health. The top and shoulders of the hill had been cleared of wood, and during a continuance of dry weather the garrison had no source of disease within itself, but this was amply, though but temporarily supplied, as soon as the rains had saturated the soil on which it stood. Thus an uncommonly rainy season at Barbadoes, seldom failed, in that perfectly dry and well-cleared country, to induce for a time general sickness: while at Trinidad,—which is almost all swampy, and the centre of the island may be called a sea of swamp, where it always rains at least nine months in the year,—if it only rained eight, or if at any time there was a cessation of the preserving rains, the worst kind of remittent fevers were sure to make their appearance. General dryness of soil, however, is far from being the ordinary characteristic of our West India Colonies. The swamp is too often exposed to the continued operation of a tropical sun, and its approach to dryness is the harbinger of disease and death to the inhabitant in its vicinity. On the whole, it may truly be said, that although excessive rains will evidently cause the acknowledged wholesome and unwholesome soils to change places for a time, in respect to health, a year of stunted vegetation, through dry seasons, and uncommon drought, is infallibly a year of pestilence to the greater part of the West India colonies.

In some other respects the history of miasmata in these countries was curious and interesting. Thus at the town of Point

au Pitre, Guadaloupe, which is situated amidst some of the most putrid marshes in the world, the stench of which is almost never absent from the streets, the place was far from being *uniformly* unhealthy. Strangers, however much they might be annoyed with the smell, often resorted to it with impunity. No more was its first out-post Fort Louis, where the waters are so stagnant and putrid, that it is even more offensive than Point au Pitre ; but at Fort Fleur d'Epeé, the farthest out-post, at the extremity of the marshes, where they approach to the state of terra firma, where little or no water is to be seen on the surface, and no smell exists, there cannot be supposed a more deadly quarter, and all white troops considered their being sent there as equivalent to a sentence of death. It ought to be noted, that the marshes of all these three posts are overgrown with the thickest underwoods, and rankest aquatic vegetation of every kind. A fact of the same kind has been observed in the Island of Tobago. The principal fort and barrack of the colony has been placed immediately to leeward of the Barcolettee swamp, within the distance of less than half a mile, and the strong ammoniacal stench of its exhalations, even at that distance, often pollutes the barracks ; but these are so far from producing fever at all times, that when I visited the white garrison there, they had been more remarkably exempt from that form of disease, for several years, than any other troops in the West Indies. I shall not multiply facts and illustrations of the same kind, to prove that putrefaction, and the matter of disease, are altogether distinct and independent elements ; that the one travels beyond the other, without producing the smallest bad effect ; and that however frequently they may be found in company, they have no *necessary* connection ; but proceed to notice other qualities of the marsh poison, which, until understood, prove extremely puzzling to the observer.

In selecting situations for posts and barracks, it had been observed with surprise, that the border, and even the centre of the marsh, proved a less dangerous quarter than the neighbouring heights of the purest soil, and healthiest temperature ; and this has never been more strongly exemplified than in the instances I am going to relate.

Port of Spain, Trinidad, the capital of the island, is situated very near the great eastern marsh, with which it is in direct communication, by a marginal line of swamp along the sea-shore. It cannot be called a healthy town, but it is very far from being uninhabitable. On the right are some covering heights, which rise out of the marsh at one extremity. These, unlike the site of the town, which has been built on marshy or alluvial ground, are composed of the driest and most healthy materials—(pure limestone, the purest and the best in all the West Indies), yet have they proved a residence deadly and destructive in the greatest degree to all who venture to inhabit any part of their diversified surface. No place, however elevated, or sunk, or sheltered, or walled in, gives security against the exhalations from below, only it has been distinctly ascertained that these prevail with more or less malignity exactly in proportion to the elevation of the dwelling. The lower, consequently the nearer the marsh, the better. The tops of the ridges are uninhabitable. On the highest top, at an elevation of 400 feet, and farther removed from the marsh than the town itself, a large martello tower was built to defend the place. It possessed a fine temperature, but proved so dangerous a quarter, that it was obliged to be abandoned. Not even a creole mulatto Spaniard could sleep in it with impunity for a single night, after a course of dry weather.

The beautiful post of Prince Rupert's, in the Island of Dominica, is a peninsula which comprehends two hills of a remarkable form, joined to the mainland by a flat and very marshy square isthmus, to windward, of about three-quarters of a mile in extent.* The two hills jut right out on the same line into the sea, by which they are on three sides encompassed. The inner hill, of a slender pyramidal form, rises from a narrow base nearly perpendicular, above and across the marsh, from sea to sea, to the height of 400 feet, so as completely to shut it out from the post. The outer hill is a round-backed bluff promontory, which breaks off abruptly, in the manner of a precipice, above the sea. Between

* The superficies of the base of the peninsula is exactly 1210 yards in length, by 850 in breadth, exclusive of the isthmus.

the two hills runs a very narrow clean valley, where all the establishments of the garrison were originally placed; the whole space within the peninsula being the driest, the cleanest, and the healthiest surface conceivable. It was speedily found that the barracks in the valley were very unhealthy; and to remedy this fault, advantage was taken of a recess or platform near the top of the inner hill, to construct a barrack, which was completely concealed by the crest of the hill from the view of the marsh on the outside, and at least 300 feet above it; but it proved to be pestiferous beyond belief, and infinitely more dangerous than the quarters in the valley, within half-musket shot below. In fact, no white man could possibly live there, and it was obliged to be abandoned. At the time this was going on, it was discovered, that a quarter which had been built on the outer hill, on nearly the same line of elevation, and exactly 500 yards further removed from the swamp, was perfectly healthy, not a single case of fever having occurred on it from the time it was built. These facts were so curious, that I procured the Surveyor-General of the island to measure the elevations and distances, and I have given them here from his report.

In the Island of Antigua, the same results were confirmed in a very striking manner. The autumn of 1816 became very sickly, and yellow fever broke out in all its low marshy quarters, while the milder remittent pervaded the island generally. The British garrison of English Harbour soon felt the influence of that most unwholesome place. They were distributed on a range of fortified hills that surround the dock-yard. The principal of these, Monk's Hill, at the bottom of the bay, rises perpendicular above the marshes to the height of 600 feet. The other garrisoned hill, which goes by the name of the Ridge, is about 100 feet lower; but instead of rising perpendicularly, it slopes backwards from the swamps of English Harbour. It was the duty of the white troops, in both these forts, to take the guards and duties of the dock-yard amongst the marshes below; and so pestiferous was their atmosphere, that it often occurred to a well-seasoned soldier mounting the night-guard in perfect health, to be seized with furious delirium while standing sentry, and when carried back to

his barracks on Monk's Hill, to expire in all the horrors of the black vomit, within less than thirty hours from the first attack ; but during all this, not a single case of yellow fever, nor fever of any kind, occurred to the inhabitants of Monk's Hill ; that is to say, the garrison staff, the superior officers, the women, the drummers, &c. ; all in fact that were not obliged to *sleep* out of the garrison, or take the duties below, remained in perfect health. The result on the Ridge was not quite the same, but it was equally curious and instructive. The artillery soldiers (seventeen in number) never took any of the night guards, but they occupied a barrack about 300 feet above the marshes ; not perpendicular above them, like Monk's Hill, but a little retired. Not a case of yellow fever or black vomit occurred amongst them, but every man, without a single exception, suffered an attack of the ordinary remittent, of which one of them died ; and at the barrack on the top of the Ridge, at the height of 500 feet, and still farther retired from the marshes, there scarcely occurred any fever worthy of notice.

Another property of the marsh poison, is its attraction for, or rather its adherence to, lofty umbrageous trees. This is so much the case, that it can with difficulty be separated from them ; and in the territory of Guiana particularly, where these trees abound, it is wonderful to see how near to leeward of the most pestiferous marshes the settlers, provided they have this security, will venture, and that with comparative impunity, to place their habitations.

The town of New Amsterdam, Berbice, is situated within musket-shot to leeward of a swamp, extremely offensive at a certain stage of dryness, in the direct tract of a strong trade wind that blows night and day, and at these times pollutes even the sleeping apartments of the inhabitants with the stench of the marshes ; yet it ordinarily brings no fevers, though every one is well aware that it would be almost certain death for an European to sleep or even to remain, after night-fall, under the shade of the lofty trees that cover the marsh at so short a distance. All, too, are equally aware, that to cut down these trees would be a most dangerous operation in itself, and would certainly be productive of pestilence to the town. A still better instance of the same, and

with the same results, may be seen at Paramaribo, the capital of Surinam, where the trade wind that regularly ventilates the town and renders it habitable, blows over a swamp within a mile of the town, which, fortunately for the inhabitants, is covered with the same description of trees.

It would be trespassing wantonly on the time and patience of the Society, to multiply farther observations of the same kind, and I shall therefore proceed to draw some conclusions which I think are fairly warranted from the facts and narrative I have submitted.

That the marsh poison cannot emanate from vegetable putrefaction, I think must be evident from the fact, that it is found most virulent and abundant on the driest surfaces; often where vegetation never existed, or *could* exist for the torrents, such as the deep and steep ravine of a dried water-course, and that it is never found in savannahs or plains that have been flooded in the rainy season, till their surface has been thoroughly exsiccated, vegetation burnt up, and its putrefaction rendered as impossible as the putrefaction of an Egyptian mummy. If this be doubted or denied, let us take examples where vegetable putrefaction is self-evident, and examine whether it be productive of disease and death, similar to what emanates from the marsh poison. Surely the evidence of every dung-heap, in every part of the world, will answer the question in the negative; or if it be insisted that the poison is generated from a combination of aqueous and vegetable putrefaction, let us resort to the easy familiar illustration of a West India sugar ship, where the drainings of the sugar, mixing with the bilge-water of the hold, creates a stench that is absolutely suffocating to those unaccustomed to it; yet fevers are never known to be generated from such a combination. These are familiar examples; but I cannot think they should be of less intrinsic value on that account, or be deemed less conclusive. The Italians, to be sure, have published ordinances against the steeping of hemp in stagnant pools, but these resemble many other ordinances relative to health every where, in overlooking the leading primary causes of the stagnant pool, the autumnal

season, and the malarious lands around, and having their point directed to a trifling concomitant circumstance of no importance.

Should it be said that the poison must then emanate from aqueous putrefaction alone, I think this may be disproven by equally familiar examples. The bilge-water in the holds of ships, which at all times smells more offensively than the most acknowledged pestiferous marshes, would in that case infallibly, and at all times, be generating fevers amongst the crew, more particularly in tropical climates. I need scarcely say, that this does not consist with the fact, unless it be in some rare instances, where the bilge-water has become, like that of the marsh, actually dried up, or absorbed into the collected rubbish and foulness of the ship's well; thereby verifying the common saying of the sailors, that a leaky ship is ever a healthy ship, and *vice versâ*. Or if it be objected that the salt may have a preserving power, let us look at the quantity of fresh water (not unfrequently the impure water of an alluvial river), laid in for a first-rate man-of-war proceeding on a long voyage. This is so great as to constitute many floorings, or tiers of barrels, close to which the people sleep with impunity, though it is always disgustingly putrid, and could not fail to affect them, if it contained any seeds of disease.* Examples of the same on land may be found with equal facility. At Lisbon and throughout Portugal, there can be no gardens without water; but the garden is almost every thing to a Portuguese family. All classes of the inhabitants endeavour to establish and preserve them, particularly in Lisbon, for which purpose they have very large stone reservoirs of water, that are filled by pipes from the public aqueducts, when water is abundant; but these supplies are always cut off in the summer. The water, consequently, being

* In some ships of our navy, the fresh water, instead of being put up in casks, has been preserved in bulk, by constructing a large open tank, of tin or lead, at the bottom of the hold, without in the least affecting the health of the crew, though they slept immediately above it. On land the very same results have been verified under the same circumstances. One of the healthiest officers' quarters in the West Indies, is the field-officers' at Berkshire Hill, St. Vincent's, which is built immediately over the garrison water-tank; and a block-house at Demerara, similarly situated, was healthier than the other posts on *terra firma*.

most precious, is husbanded with the utmost care for the three months' absolute drought of the summer season. It falls of course into the most concentrated state of foulness and putridity, diminishing and evaporating day after day, but never absorbed, till it subsides either into a thick green vegetable scum, or a dried crust. In the confined gardens of Lisbon particularly, these reservoirs may be seen in this state close to the houses, even to the sleeping places of the household, in the atmosphere of which they literally live and breathe; yet no one ever heard or dreamt of fever being generated amongst them from such a source; though the most ignorant native is well aware, that were he only to cross the river, and sleep on the sandy shores of the Alentejo, where a particle of water at that season had not been seen for months, and where water being absorbed into the sand as soon as it fell, was never known to be putrid, he would run the greatest risk of being seized with remittent fever.

From all the foregoing, the deduction appears to be unquestionable, that endemic fevers cannot be generated either from aqueous or vegetable putrefaction, singly or combined. It emanates, as we have seen, from the shores of the purest streams, wherever they have been flooded during the rains, through want of confining banks, and it is absent from the most putrid waters. It must be impossible that healthy living water, which from its current is in a perpetual course of being refreshed and renewed, can ever, by any degree of solar heat, be brought into the state of morbidic miasmata; and the evil must therefore reside in the half-dried and drying margin; for the swamp is no more than this margin rolled up under another shape, and it must be brought into the same degree of dryness before it can produce any morbidic effects.

One only condition, then, seems to be indispensable to the production of the marsh poison, on all surfaces capable of absorption; and that is, the paucity of water, where it has previously and recently abounded. To this there is no exception in climates of high temperature; and from thence we may justly infer, that the poison is produced at a highly advanced stage of the drying process; but, in the present state of our knowledge, we can no more

tell what that precise stage may be, or what that poison actually is, the development of which must necessarily be ever varying, according to circumstances of temperature, moisture, elevation, perflation, aspect, texture, and depth of soil, than we can define and describe those vapours that generate typhus fevers, small-pox, and other diseases. The marsh and the stagnant pool will no doubt be pointed out as the ostensible sources from which this poison has ever sprung; but the marsh, it has been seen, is never pestiferous when fully covered with water. At all other times it must present a great variety of drying surface, and both the lake and the marsh must ever possess their saturated, half-dried, and drying margins. It is from these that the poison uniformly emanates, and never from the body of the lake or pool; and I think it may be even fairly presumed that water, for as long as it can preserve the figure of its particles above the surface, is innoxious, and that it must first be absorbed into the soil, and disappear to the eye, before it can produce any mischievous effects. The most ignorant peasant of Lincolnshire knows that there is nothing to be apprehended from the ditches of his farm till they have been dried up by the summer heat; and though the inhabitant of Holland may point to the unexhausted foul canal as the source of his autumnal fever, there can be little doubt that he might live upon a sea of the same with impunity, and that it is to the absorbed waters under his feet, which, without the canal, would in all probability be much more pestilential, he ought to attribute the disease. To assert, after all this, that the putrid marsh, which must necessarily, to a certain degree, be a wet one, is positively less dangerous than another where no smell exists, will not, I am sure, appear paradoxical to the Society; for it is only saying, that the first has not yet arrived at the degree of exsiccation that has been found most productive of the marsh poison, and that putrefaction, though it may, and must often precede and accompany pestilence, is no part of pestilence itself.

The symbol of vegetable putrefaction, in the decay of the aquatic weeds that cover the pool, constantly meets the eye, and deceives the judgment; and the smell of the putrefying waters combined with it, confirms a delusion which has ever prevented us

from discovering, that the action of a powerful sun, on its half-dried margin, is adequate to the production of all that could be attributed to the humid decay of vegetables. The greatest danger then may, and does often exist, where no warning whatever is perceptible to the senses ; and whoever, in malarious countries, waits for the evidence of putrefaction, will, in all the most dangerous places, find that he has waited too long, as every one can testify who has seen pestilence steam forth, to the paralyzation of armies, from the bare barren sands of the Alentejo in Portugal—the arid burnt plains of Estremadura in Spain—and the recently flooded table lands of Barbadoes, which have seldom more than a foot of soil to cover the coral rock, and are therefore, under the drying process of a tropical sun, brought almost immediately after the rains into a state to give out pestilential miasmata.

I shall conclude this paper with a few more observations on some of the qualities not yet noticed of the marsh poison. No experiments hitherto made have enabled us to pronounce whether it be specifically heavier or lighter than common air, but it evidently possesses an uncommon and singular attraction for the earth's surface ; for in all malarious seasons and countries, the inhabitants of the *ground floors* are uniformly affected in a greater proportion than those in the *upper stories*. According to official returns during the last sickly season at Barbadoes, the proportion of those taken ill with fever, in the lower apartments of the barracks, exceeded that of the upper by one-third, throughout the whole course of the epidemic. At the same time it was observed, that the deep ditches of the forts, even though they contained no water, and still more the deep ravines of rivers and watercourses, abounded with the malarious poison. At Basseterre, Guadaloupe, a guard-house placed at the conflux of the inner and outer ditch of the fort, invariably affected every white man with fever that took a single night-guard in it ; and the houses that were built in the ravine of the river Gallion (a clear rapid mountain stream that runs through the town), or opposite to its “bouchure,” proved nearly as unhealthy as the guard-house above mentioned.

Another proof that from the attraction above mentioned it creeps

along the ground, so as to concentrate and collect on the sides of the adjacent hills, instead of floating directly upwards in the atmosphere, is the remarkable fact, *that it is certainly lost and absorbed by passing over a small surface of water*, which could scarcely happen unless it came into direct contact with the absorbing fluid. The rarefying heat of the sun, too, certainly dispels it, and it is only during the cooler temperature of the night that it acquires body, concentration, and power. All regular currents of wind have also the same effect, and I conceive it to be through the agency of the trade wind alone, which blows almost constantly from east to west, that the greater part of the West Indies is rendered habitable. When this purifying influence is withheld, either through the circumstances of season, or when it cannot be made to sweep the land on account of the intervention of high hills, the consequences are most fatal. The leeward shore of Guadaloupe, for a course of nearly thirty miles, under the shelter of a very high steep ridge of volcanic mountains, never felt the sea-breeze, nor any breeze but the night land wind from the mountains; and though the soil, which I have often examined, is a remarkably open, dry, and pure one, being mostly sand and gravel, altogether and positively without marsh in the most dangerous places, it is inconceivably pestiferous throughout the whole tract, and in no spot more so than the bare sandy beach near the high water-mark*. The coloured people alone ever venture to inhabit it, and when they see strangers tarrying on the shore after night-fall, they never fail to warn them of their danger. The same remark holds good in regard to the greater part of the leeward

* In our own country, an instance of a pure surface, absolutely destitute of vegetation, proving as malarious as any other spot that I know of in England, may be seen at Dungeness, on the coast of Kent. The point of Dungeness is a tongue of land appended to the great Romney Marsh, and consists of an extensive bank of shingle or gravel, so dry, loose, and open, that even during wet weather horses sink in it nearly up to the knees. The forts and barracks are at least four miles from what may be called the mainland, where the grass begins to grow, yet was there no spot of that unwholesome tract of contry more prolific of endemic fever during the hot summer and autumn of 1807 than these barracks. In one part of the gravel, but not near the barracks, were some very deep pools, of no great extent, containing a singularly pure pellucid fresh water.

coast of Martinique, or the leeward alluvial bases of hills, in whatever part of the torrid zone they may be placed, with the exception, probably, of the immediate sites of towns, where the pavements prevent the rain water being absorbed into the soil, and hold it up to speedy evaporation.

For this, if there be a remedy, it must be found in the powers of cultivation, ever opening the surface for the escape of pestilential gases, and exhausting the morbid principle by a constant succession of crops; for, wherever malaria prevails, the uncultivated savannah, even though used for pasture, becomes infinitely more pestiferous than the plantation, and the depopulated country falls completely under its dominion. With the aid of the purifying sea-breeze, this course at the British colony of Demerara, within six degrees of the equator, has succeeded in rendering the cultivated portion of the deepest and most extensive morass probably in the world a comparatively healthy, fertile, and beautiful settlement. I shall not here enter into a detailed account of the astonishing system of tide and flood-gate drainage by which this delightful result has been established and kept up, but hasten to a conclusion.

It would be unphilosophical to suppose that the marsh poison, because other distempers, such as dysentery, co-exist with it, ever produces any disease but a specific one, of which it is the acknowledged parent, varying, however, in form, and as a modification of effect from the same cause, from the common ague of the fens of Lincolnshire, through all the milder remittent types, up to the aggravated yellow fever, or malignant remittent, of the West Indies; and *that* variation, so certain and uniform, in proportion to the power of the remote exciting cause, that the varying types of fever might be measured almost to a certainty by the degrees of solar heat, as marked on the thermometer. Thus it is most rare and uncommon to meet with an ague in the West Indies, in the swampy alluvial plains at the level of the sea, where the generality of the towns and settlements are placed;—as rare, or rather as impossible, as it would be to meet with any thing else but a common remittent or an intermittent fever on the cooler mountain marshy levels of the same country. The highest degree of suscep-

tibility and excitement from solar heat on the part of the *subject*, combined with the highest state of preparation from the same, on the part of the *agent*, appear to be essential in all situations to the production of the dreadful yellow fever, which, luckily for mankind, is incapable of being transported to any locality of lower temperature, or texture of soil different from that which gave it birth. Need I say that such a disease, however rapid and appalling may be its epidemic current, is not, and cannot, no more than a common ague or remittent fever, be in the smallest degree contagious?

There are few, indeed, of those that have been compelled to live under its scourge who have not overcome the prejudices of their education on this head; but, unluckily, a different impression obtains very generally amongst those who have never seen the disease, which deeply affects the peace of society every where, and in some countries has proved subversive of the best interests of humanity. Such opinions it is the duty of every man, who has had sufficient experience, to combat, by stating the results of personal exposure and investigation, and thereby do his utmost to rescue medical science from the dominion of a prejudice which disgraces it.

I shall now close this tedious paper, wherein I have endeavoured, as much as possible, to avoid all professional disquisitions, or references to authors, or even allusion to any ground on which I have not personally trod. It was my earnest wish to have made it shorter, but amidst the multiplicity of matter and illustration with which I have been literally oppressed, I found that I could not abridge it farther, and at the same time do justice to the subject.

NOTE ON THE NEGRO SKIN.

THE adaptation of the Negro to live in the unwholesome localities of the Torrid Zone, that prove so fatal to Europeans, is most happy and singular. From peculiarity of idiosyncrasy, he appears to be proof against endemic fevers, for to him marsh miasmata are in fact no poison, and hence his incalculable value, as a soldier, for

field service in the West Indies. The warm, moist, low, and leeward situations, where these pernicious exhalations are generated and concentrated, prove to *him* congenial in every respect. He delights in them, for he there enjoys life and health, as much as his feelings are abhorrent to the currents of wind that sweep the mountain tops, where alone the whites find security against endemic fevers.

One of the most obvious peculiarities of the Negro, compared with the European, is the texture of his skin, which is thick, oily, and rank, to a great degree: and from this circumstance the theorist, when he speculates on the mode of reception of the marsh poison into the constitution, whether by the lungs, the stomach, or the skin, may draw a plausible conjectural inference (for it can be no more) in favour of the last. It is certain that, amongst Europeans, the thick-skinned and dark-haired withstand the influence of the marsh poison much better than those of the opposite temperament; and it is equally certain, from the never-failing primary headache, that its first impression is invariably upon the brain, as if it had been taken up by the sentient extremities of nerves, of which the skin is so truly an expansion, and conveyed to the sensorium.

Another argument of analogy, in favour of the same opinion, may be derived from a reference to the plague, which is the pestilential endemic fever of the *Levant*, or rather of the arid sandy regions of the southern coasts of the Mediterranean. In that disease we see reason to believe that the poison enters by the skin, because swellings of the lymphatic glands are amongst its most prominent symptoms; because oily frictions of the skin are said to be preservative against it, and that carriers or workers in oil do not take the disease.

When the poison is received into the constitution, through whatever channel it may enter, its effects are actually not very dissimilar, in some cases, to those from the bite of a serpent. The aggravated cases of yellow fever at Antigua mentioned in this paper, and those that have frequently occurred at St. Lucia and Martinique, from the bite of the large brown viper of these islands,

ran a course not without some resemblance, in the impaired nervous energy, the vomitings, the dissolution of the blood, as marked by the livid discolorations under the skin (hence the very improper name of yellow fever), and its discharge from the internal surfaces previous to the fatal termination.

BLACK TROOPS IN THE WEST INDIES*.

THE employment of black troops, for the service of the West Indian Colonies, is a subject that has not hitherto attracted the attention it merits, and is consequently little understood by military men. But it is, in reality, a mine of saving force we have lately opened, and its efficiency and resources can scarcely be over-estimated; for we know, from sad experience, with what fatal rapidity the white soldiers perish in most localities in these islands, even in times of peace, and resist all the care that can be bestowed upon them, and that, if called upon to exercise their profession in actual warfare, it does not require the bullet or the steel of an enemy to hurry whole armies to an untimely grave. If, however, we substitute the Negro for the European soldier the case is widely different, for though I do not deny that in many of the mental qualities that constitute a perfect soldier he may be inferior to his white comrade, still he is a child of the sun, the climate is his own, and he is capable of exertions in it of which we seem as yet to have had but little adequate idea. The question is, have we taken the best means of eliciting his peculiar powers, and calling forth the faculties and facilities with which he is gifted for West India service? He delights in the sun—its vertical rays, which so certainly strike down the unprotected European, dart harmlessly upon his woolly head and spongy cancellated cranium; nor do they blister his thick unctuous skin, however long he may be exposed

* This essay, on the Employment of Black Troops in the West Indies, was partly published in No. 77 of the United Service Journal for 1835, and partly rewritten, with the evident intention of being inserted somewhere in the preceding volume. I have pieced the fragments together, so as to make up, as nearly as the materials will admit of, such an essay as I conceive my father intended to write; but as in this state it is manifestly imperfect, I have preferred placing it here at the end of the volume, instead of inserting it among the military subjects of the text, to which, properly speaking, it more correctly belongs.—EDITOR.

to them. He may also be said to be fever proof, and the marshy savannahs, which lie low and sheltered and unventilated, prove to him the most healthful abode. Here, then, at once we arrive at the grand desideratum of a soldier, not only habituated to the climate, but its favoured product, who can use, and enjoy, and, as it were, absorb all its heat, to the great benefit of the recipient, who thus seems to acquire life, and health, and power, in proportion to its intensity. Cold he cannot bear—he shivers under the ordinary dews of the night, and always seeks the protection of a closed hut and the cover of a blanket. He is sensual in his appetites, but rarely a drunkard; for even the bad example of his European masters, and our institutions of drunkenness, have failed to make him so. In his food he requires the support of bulk, and the vegetable meal on which he delights must be highly seasoned and abundant. He is no practitioner of celibacy, and will never live in a barrack, like other soldiers, unless per force, for he will escape if he can to the humble hut in which he was bred, where all his affections are centred. He would go naked all the day long, if allowed, and, though requiring a blanket at night, cannot bear the irksomeness of heavy clothing during the day. His feet, above all, should be left unconfined—they are thin, flat, and prehensile, with widely radiating toes, and to cram them into an English shoe, taken from the commissariat store, is as preposterous and wicked an act of laming as can well be imagined. His diet and subsistence seem to have been equally mistaken. With national prejudice and bigotry we seem to insist that whatever tribe or nation we take into our pay shall forthwith be dubbed British soldiers, and be gifted with the tastes and digestive organs of their new estate. Our full pay is lavished upon them, and our rations, as it were, forced down their throats: but the negro does not require more than about a fourth part of the salt meat; he, until corrupted, detests the rum; the bread or biscuit is in far too concentrated a form to be agreeable to him; of the sugar he would take ten times as much if he could get it; and all the other articles, unless when in the field, and removed from his markets, could be spared, for he will feed himself far better from the produce of the colony, with the plantain, the yam, the sweet potatoe, &c., because

in them he will procure a far bulkier and more savoury meal, seasoned, as he well knows how, with the native peppers, and a small portion of salt provision to give a relish ; and in this way he prepares a mess which even the epicure, were he in the bivouac, might envy. Our full-pay, too, is as absurdly lavished upon him as our rations, for half would suffice. He delights to cater for himself, and, give him what we will, we cannot prevent him, for he will barter and exchange the regular provision for what he likes far better : and here he reads to his European masters a lesson which ought not to be lost upon them, for of all military instruction, that of cooking and foraging—without plunder, however—is the most useful to the soldier. Leave the negro alone, with an adequate pay, he will find his own dinner, and dress it. He will, moreover, build his hut ; and, when in stationary quarters, cultivate the surrounding grounds. We may pull down his barrack, for in a few hours he will have reared a far more suitable habitation. Wherever he goes or marches, his wife must accompany him—he will not live without her, and it will be in vain to try to prevent it ; nor should we, for she is the best inhabitant of the bivouac, being his carrier, forager, cook, and washer—as hardy and indefatigable as himself, indeed often more so, and always serviceable and useful. As a soldier under arms, the Negro is capable of the highest instruction. When I was last in the West Indies, the 8th West India regiment, composed entirely of native Africans rescued in the middle passage, exhibited as fine a military corps, if a civilian may give an opinion, as ever was seen of any colour. In all light manœuvres they were perfect ; as marksmen they were superior to the ordinary run of white soldiers ; and when Fort Bourbon, Martinique, the strongest citadel of the West Indies, with the exception of the Havannah, came to be stormed, they went to the breach with European courage. How sad, then, how cruel, that when we possess, or can form, troops like these, we should still send our best and bravest British natives to perish in the pestiferous climates of the West Indies ! The 50th and 92d regiments were, in the Peninsula, the *élites* of British valour, their character stood as high in the army as did that of the tenth Roman legion in the estimation of Julius Cæsar, for they were as exemplary in

ordinary conduct as they were heroic in the field, and their first reward, on the return of peace, was a mission to die in the pestilential swamps and savannahs of Jamaica; and could not this cruel sacrifice have been spared? It could, if we had chosen to preserve our West India regiments of far more efficient serviceable men in that climate and in the time of peace; but the planters of those days could not bear to see a black face released from the labour of the field, and our merchants of Kingston insisted upon having white troops to take the guards of the place, and to form *spectacle* when on high days and holidays they chose to make jubilee. Let us hope this can never happen again. The price would be too great even to preserve the British West Indies, and when we consider that in the now creolized negro will be found the best troops in the world for West India service, it never ought to be paid.

The following note, which was presented to the commander of the forces in the windward and leeward colonies when I was about to quit the command in the year 1817, will probably tend to elucidate the merits of black troops. It was written upon the spot twenty-three years ago, and all the subsequent consideration I have been able to bestow upon it, leads to the affirmation of the truth and justice of the opinions therein expressed. "Under some shape or other, black troops must always be considered the operative force of the West Indies. Without their aid, or I should rather say, unless the labouring oar be plied almost entirely by them, the whites must run the risk of being extirpated annually, and the duration of the soldier's life will be closed oftener than it is at present within the year. The adaptation of the African negro to West India service is most happy and singular. From peculiarity of idiosyncrasy he appears to be proof against endemic fevers. To him marsh miasmata, which so infallibly destroy our white soldiers, are in fact no poison. The warm, moist, low, and leeward situations, where these pernicious exhalations are generated and concentrated, prove to him congenial in every respect. He delights in them, for he there finds life and health, as much as his feelings are abhorrent to the currents of wind that sweep the mountain tops, where alone the whites find security against tropical diseases; but the black, when placed there, is almost infallibly

struck with the bowel and breast complaints which prove so fatal to him. From this it would appear that each has his distinct and separate place in West India service, and that the consequences of an exchange or trespass upon the bounds of each other cannot fail to be prejudicial to both.

“I have already shewn where black troops ought to be quartered, if we wish to preserve their health, and to save our white soldiers from the most fatal influences of soil and climate ; and I may now state that the duties for which they are particularly fitted are those of fatigue, whether of marching or labour, so that all the interior service of a colony that is executed by troops of the description of Rangers, ought to be confided entirely to them. During insurrection or irregular desultory interior warfare of any kind, they alone are constitutionally qualified to range the woods, to overtake and to cope with an enemy of their own colour in the fastnesses of the West Indies. Europeans, besides being physically unfit for it, sent on the same service, infallibly droop and die as soon as it is over, from the effect of the heats they have been exposed to, and the endemic diseases they must imbibe during this kind of warfare. Such are the negro troops of the West Indies, and such their uses. It now remains to be seen whether we have improved their natural faculties, which are so well adapted to West India service, and which can be turned to such eminent advantage in the preservation of our European forces. The black comes into our hands an uncivilised African from his native woods, and we immediately dub him a British soldier, clothe him in full uniform, not forgetting shoes, by which he is rendered lame and useless at least for a year. We ordain, moreover, that he shall at once have the appetites and digestive organs of his new estate, and exchange his vegetable diet of the fruits of the earth for salt beef and rum. That he shall cease to labour, and thereby lose the use of the only faculties, those of his feet and his hands, of which he ever was possessed. The black troops are not as healthy as their half-naked brethren on a well-regulated plantation, which is not to be wondered at, and I am only surprised that under the rude experiment I have just detailed, and the unnatural mode of living to which we have condemned them, they are not generally

cut off by the diseases which follow all rash attempts to control nature, and the habits which are justly said to be a second nature.

“I believe the co-operation of black troops to be indispensable towards the very existence of a white European force in the West Indies, but to qualify them for the eminently useful part they are so well calculated to act, it seems essential that they should no longer be nursed in barracks, but be employed in duly-regulated labour, and thereby regain a healthy condition of mind and body; that they should cease to draw the rations of a British soldier, more particularly the rum, and be supplied with a more suitable, a cheaper, and more abundant one, to the great saving of the public purse, as well as of their own health; and that barracks should no longer be kept up at an immense expense for their accommodation, however little for their comfort, but that in every situation they should be made to hut themselves; an occupation in which they would not fail to take an interest, in which many of them were adroit before they came into our hands, and which, by teaching to all one of the most useful lessons, would eminently prepare them for the warfare, that of woods and mountains, to which they are destined. The black soldier feels as little pride as he derives comfort from the stately barrack—it is in the hut alone, to which he has been habituated, and which, under military regulation, could always be made, through the labour of his hands, a well-ventilated, healthy habitation, that he feels himself to be comfortable and happy. To speak of the black soldier physically, he must ever be the ranger and pioneer of the West Indies. He is eminently, through native constitution, qualified for both these services, while the white European soldier can undertake neither without almost certain loss of life.”

From the foregoing it will be seen of what vital importance to the preservation of our dominion in the West Indies must be the keeping up of a strong black force. The fate of our white troops there can be told in few words, for it has been uniformly the same. They land, storm the batteries with almost unvaried success, “and then the conquest is consecrated by the burial of the troops that achieved it.” Within a twelvemonth it would be rare to find so

many as a tenth part in existence, or even the same proportion of the unfortunate soldiers who have streamed out from Europe to fill up the deficiencies, but who, without the excitement of victory, arrive amidst disease and death, only to become their victims. This has arisen from the nature and position of almost all West India strong holds, being near the level of the sea, at the foot of the mountains, and bottom of the deepest bays, to ensure a harbour for the commerce of the country. There white troops can never live, but there is scarcely a colony of the West Indies that amidst its mountain ranges does not present localities which, in point of salubrity, might vie with any in the world, and it is in these the European troops ought to be quartered, leaving the low leeward stations to be occupied by the black, with only such a proportion of the other force as may be necessary to guard against surprise. With a British garrison they have always been charnel-houses, and they surely would be better protected by having their defenders fresh, healthy, and entire in numbers within a day's march, than by the diseased, the exhausted, and the dying, that ordinarily occupy them. Such an internal citadel would moreover be the best security against insurrection of every kind, and effectually disappoint the invader, who, when he has carried the capital at the sea-side, generally looks upon the conquest being completed; and without it every colony must continue to be a drain of human life upon the mother country, as appalling to humanity, as it must be discreditable to good government. This part of my subject will be found most ably handled in the writings of my predecessor in the West Indies, the deceased Doctor Jackson, from which I have borrowed the expression marked by inverted commas: to which I would add, that during the time we occupied St. Domingo (a space of about four years), 628 commissioned officers perished, and a still greater proportion of the common soldiers. The same mortality prevailed throughout the West Indies wherever our arms were carried, and if we reflect upon the value of these precious lives even as a matter of finance, of how much importance their preservation might have been for the great national objects of continental war, and that they might in great part have been saved to the country by the substitution of negro troops, then it is to be

hoped that, in future wars, this cheap resource (for cheap it is in every sense)*, if properly managed, will not be overlooked, but duly cultivated as much to the tranquillity of the colony by the employment of their superabundant coloured population, as to the advantage of the mother country, in thus saving her native forces. I know it will be said that the black cannot be trusted, and that he would conspire with his countrymen against the white dominion; but is this true of any soldiers in the world? has it been true in any degree with respect to the West India regiments of the last war? and does not the *esprit de corps*, and of caste, that separates the military from the civilian in all countries, ever dispose the former, as soon as he is enlisted, to hold himself superior to the latter? and if we acknowledge this principle to prevail in the case of civilised man, how much more certainly may we rely on its influencing the semibarbarous! The question, in short, comes to this—easy, cheap, and sure dominion, through the due organization of black troops, or uncertain sway, with immense expense, as at present, accompanied by a loss of life from which the most reckless government, if it ever looked at the case fairly, ought to shrink.

In the black we possess a power capable of insuring colonial dominion, with incalculable saving of life and treasure to the mother country. We know, at least, that they must be invincible in their native fastnesses, and whoever goes to seek them there will ingloriously be destroyed: bear witness St. Domingo, where one of the finest armies of France perished, at least for all the purposes of an army, within the year; and to attempt the reconquest of that fine country with any other than an army of negroes, would be vain as a contest against the unalterable morbid elements of the natural world. Let, then, this power be duly cherished and wisely used,—it may otherwise be made to turn upon ourselves, and

* The whole expense of a black soldier, including stoppages of every kind, need never exceed six dollars per month; and it would be a most ample and liberal allowance, for every one who has served there knows that their domestic servants would undertake to feed themselves on a monthly allowance of two dollars, and a well-fed plantation negro never costs so much; even for servants of a superior order, it was the custom to pay twelve dollars per month to the owner, out of which only two were allotted to the slave for his subsistence, with which he was quite contented.

destroy that very dominion it was so beautifully calculated to have extended and preserved. To suppose, after emancipation has been completed, that the black will ever become a steady, gainful agriculturist, is contrary to every experience of his nature. His paradise lies in the alternations of indolence and excitement, not in the enjoyments resulting from sober industry, and to such the military life has charms irresistible. To obtain conquest over him will be difficult—to induce him to labour as formerly impossible: the trade of arms can alone captivate his mind, and with nearly a million to choose from, what slave-holding nation will dare to invade the country of the free black soldier when led by British officers, and organized and instructed in British discipline? The empire of tropical America must hereafter reside in his emancipated strength, and that empire will be the prize of the country that knows how to wield his powers.

A P P E N D I X.

LETTERS ON THE CHOLERA MORBUS,

&c. &c. &c.

WINDSOR, FEB. 9, 1832.

Salus populi suprema lex.

IN writing the following letters, which I have given in the order of their respective dates, I was actuated by the state of the public mind at the time in regard to the dreaded disease of which they principally treat. The two first were addressed to the Editor of the Windsor Express, and the third to a Medical Society here, of which I am a member. The contemplation of the subject has beguiled many hours of sickness and bodily pain, and I now commit the result to the press in a more connected form, from the same motives, I believe, that influence other writers—zeal in the cause of truth, whatever that may turn out to be, and predilection for what has flowed from my own pen, not however without the desire and belief, that what I have thus written may prove useful in the discussion of a question which has in no small degree agitated our three kingdoms, and most deeply interested every civilized nation on the face of the earth.

No one, unless he can take it upon him to define the true nature of this new malignant cholera morbus, can be warranted utterly to deny the existence of contagion, but he may at the least be permitted to say, that if contagion do exist at all, it must be the weakest in its powers of diffusion, and the safest to approach, of any that has ever yet been known amongst diseases. Amateur physicians from the Continent, and from every part of the United

Kingdoms, eager and keen for cholera, and more numerous than the patients themselves, beset and surrounded the sick in Sunderland with all the fearless self-exposing zeal of the missionary character; yet no one could contrive, even in the foulest dens of that sea-port, to produce the disease in his own person, or to carry it in his saturated clothing to the healthier quarters of the town where he himself had his lodging.* Surely if the disease had been typhus fever, or any other capable of contaminating the atmosphere of a sick apartment, or giving out infection more directly from the body of a patient, the result must have been different; its course, notwithstanding, has been most unaccountably and peculiarly its own: slow and sure for the most part, the infected wave has rolled on from its tropical origin in the far distant east, to the borders of the arctic circle in the west—not unfrequently in the face of the strongest winds, as if the blighting action of those atmospherical currents had prepared the surface of the earth, as well as the human body, for the reception and deposition of the poison; but so far from always following the stream and line of population, as has been attempted to be shown, it has often run directly counter to both, seldom or never desolating the large cities of Europe, like the plague and other true contagions, but rather wasting its fury upon encampments of troops, as in the east, or the villages and hamlets of thickly-peopled rural districts.

That it could have been descried on no other than the above line must be self-evident, but to say that it has followed it in the manner that a contagious disease ought to have done, in our own country for instance, is at variance with the fact. From Sunderland and Newcastle to the south, the ways were open, the stream of population dense and continuous, the conveyances innumerable, the communications uninterrupted and constant. Towards the thinly-peopled north how different the aspect!—townships rare, the country often high, cold, and dreary, in many parts of the

* The numbers were so great (to which I should probably have added one, had my health permitted) as actually to make a gala day in Sunderland, and to call forth a public expression of regret at their departure.

line without inhabitants or the dwellings of man for many miles together, yet does the disease suddenly alight at Haddington, a hundred miles off, without having touched the towns of Berwick, Dunbar, or any of the intermediate places. It is said to have been carried there by vagrant paupers from Sunderland. Can this be true? Could any such, with the disease upon them in any shape, have encountered such a winter journey without leaving traces of it in their course?* or, if they carried it in their clothing, the winds of the hills must have disinfected these *fomites* long before their arrival. No contagionist, however unscrupulous and enthusiastic, nor quarantine authority however vigilant, can pretend to say how the disease has been introduced at the different points of Sunderland, Haddington, and Kirkintulloch,—no more than he can tell why it has appeared at Doncaster, Portsmouth, and an infinity of other places, without spreading. Even now, it lingers at the gates of the great open cities of Edinburgh and Glasgow, as if, like a malarious disease (which I by no means say that it is), it better found its food in the hamlet and the tent; in fact, amongst the inhabitants of ground tenements, than in paved towns and stone buildings. We must go farther, and acknowledge, that for many months past our atmosphere has been tainted with the miasm or poison of cholera morbus, as manifested by unusual cases of the disease almost every where, and that these harbingers of the pestilence only wanted such an ally as the drunken jubilee at Gateshead, or atmospherical conditions and changes of which we know nothing, to give it current and power. That the epidemic current of disease, wherever men exist and congregate together, must, in the first instance, resemble the contagious so strongly, as to make it impossible to distinguish the one from the other, must be self-evident: and it is only after the touchstone has been applied, and proof of non-communicability been obtained, as at Sunderland, that the impartial observer can be enabled to discern the difference.—Still, however, must he be puzzled with the inexplicable phenomena of this strange pesti-

* The cholera in this country would appear always to travel with the pedestrian, and to eschew the stage coach even as an outside passenger.

lence; but if he feel himself at a loss for an argument against contagion, he has only to turn to one of the most recent communications from the Central Board of Health, where he will find "That the subsidiary force under Colonel Adams, which arrived in perfect health *in the neighbourhood* of a village of India infected with cholera, had seventy cases of the disease the night of its arrival, and twenty deaths the next day," as if the march under a tropical sun, and the encampment upon malarious ground, or beneath a poisoned atmosphere, were all to go for nothing; and that the neighbourhood of an infected village, with which it is not stated that they held communication, had in that instantaneous manner alone, produced the disease. This is surely drawing too largely upon our credulity, and practising upon our fears beyond the mark.

The anti-contagionist, in acknowledging his ignorance, leaves the question open to examination; but the contagionist has solved the problem to his own mind, and closed the field of investigation, without, however, ceasing to denounce the antagonist who would disturb a conclusion which has given him so much contentment.—Let us here examine, for a moment, who in this case best befriends his fellow men. The latter, in vindication of a principle which he cannot prove, would shut the book of inquiry, sacrifice and abandon the sick (for to this it must ever come the moment pestilential contagion is proclaimed), extinguish human sympathy in panic fear, and sever every tie of domestic life,—the other would wait for proofs before he proclaimed the ban, and even then, with pestilence steaming before him, would doubt whether that pestilence could be best extinguished, or whether it would not be aggravated into tenfold virulence, by excommunicating the sick.

In my first letter I have endeavoured to unveil the mystery and fallacy of fumigations, for which our government has paid so dear,* and in place of the chemical disinfectants, so much extolled, of the applicability of which we know nothing, and which have always failed whenever they were depended upon, have recommended the

* Parliament voted a reward of £5000 to Dr. Carmichael Smith for the discovery.

simple and sure ones of heat, light, water, and air—with one exception, the elements of our forefathers, which, combined always with all possible purity of atmosphere, person, and habitation, have been found as sure and certain in effect as they are practical and easy of application.

Of our quarantine laws I have spoken freely, because I believe their present application, in many instances, to be unnecessary, cruel, and mischievous. Too long have they been regarded as an engine of State, connected with vested interests and official patronage, against which it was unsafe to murmur, however pernicious they might be to commerce, or discreditable to a country laying claim to medical knowledge. The regulation for preventing the importation of tropical yellow fever (which is altogether a malarious disease of the highest temperature of heat and unwholesome locality), into England or even into Gibraltar, stands eminent for absurdity. It has long been denounced by abler pens than mine, and I know not how it can be farther exposed, unless we could induce the inhabitants of our West India Colonies to enforce the *lex talionis*, and institute quarantines, which they might do with the same or better reason, against the importation of pleurisies and catarrhs from the colder regions of Europe. A practical joke of this kind has been known to succeed, after reason, argument, and evidence, amounting to the most palpable demonstration, had proved of no avail.

While I have thus impugned the authority of boards and missions, and establishments, I trust it never can be imputed to me that I could have intended any the smallest personal allusion to the eminent and estimable men of whom they are composed,—all such I utterly disclaim; and to the individual, in particular, who presided over our mission to Russia, who has been my colleague in the public service, and whose friendship I have enjoyed from early youth, during a period of more than forty years, I would here, were it the proper place, pay the tribute of respect which the usefulness of his life, and excellence of his character, deserves.

LETTER I.

TO THE EDITOR OF THE WINDSOR EXPRESS.

SIR,—Being well aware of the handsome manner in which you have always opened the columns of your liberal journal to correspondents upon every subject of public interest, I make no further apology for addressing, through the Windsor Express, some observations to the inhabitants of Windsor and its neighbourhood upon the all-engrossing subject of cholera morbus.

That pestilence, despite of quarantine laws, boards of health, and sanatory regulations, has now avowedly reached our shores, and we may be permitted at last to acknowledge the presence of the enemy—to describe to the affrighted people the true nature of the terrors with which he is clothed—and to point out how these can be best combated or avoided.

That the seeds of his fury have long been sown amongst us may be proved, and will be proved, ere long, by reference to fatal cases of unwonted cholera morbus appearing occasionally, during the last six months, in London, Port Glasgow, Abingdon, Hull, and many other places, which, as it did not spread, have been passed unheeded by our health conservators; but, had the poison then been sufficiently matured to give it epidemic current, would have been blazed forth as imported pestilence. Some one or other of the ships constantly arriving from the north of Europe could easily have been fixed upon as acting the part of Pandora's box, and smugglers from her dispatched instanter to carry the disease into the inland quarters of the kingdom. I write in this manner, not from petulance, but from the analogy of the yellow fever, where this very game I am now describing has so often been played with success in the south of Europe; and will be played off again, so long as lucrative boards of health and gainful quarantine establishments, with extensive influence and patronage, shall continue to be resorted to for protection against a non-existent—an impossible contagion.

But to the disease in question. It must have had a sponta-

neous origin somewhere, and that origin has been clearly traced to a populous unhealthy town in the East Indies—no infection was ever pretended to have been carried there, yet it devastated with uncontrollable fury, extending from district to district, but in the most irregular and unaccountable manner, sparing the unwholesome localities in its immediate neighbourhood, yet attacking the more salubrious at a distance—passing by the most populous towns in its direct course at one time, but returning to them in fury at another; staying in none, however crowded, yet attacking all some time or other, until almost every part of the Indian peninsula had experienced its visitation.

There is an old term, as old as the good old English physician Sydenham—*constitution of the atmosphere*: and to what else than to some inscrutable condition of the element in which we live, and breathe, and have our being—in fact, to an atmospheric poison beyond our ken—can we ascribe the terrific gambols of such a destroyer? 'Tis on record, that when our armies were serving in the pestilential districts of India, hundreds, without any noticeable warning, would be taken ill in the course of a single night, and thousands in the course of a few days, in one wing of the army, while the other wing, upon different ground, and consequently under a different current of atmosphere, although in the course of the regular necessary communication between troops in the field, would remain perfectly free from the disease. It would then cease as suddenly and unaccountably as it began—attacking, weeks after, the previously unscathed division of the army, or not attacking it at all at the time, yet returning at a distant interval, when all traces of the former epidemic had ceased, and committing the same devastation. Now will any man, not utterly blinded by prejudice, candidly reviewing these facts, pretend to say that this could be a personal contagion, cognizable by, and amenable to, any of the known or even supposable laws of infection—that the hundreds of the night infected one another, or that the thousands of the few days owed their disease to personal communication? As well affect to believe that the African Simoon, which prostrates the caravan, and leaves the bones of the traveller to whiten in the sandy desert, could be a visitation of imported pestilence.

It may then be asked, have we no protection against this fearful plague? No means of warding it off? Certainly none against its visitation! It will come—it will go; we can neither keep it out, or retain it, if we wished, amongst us. The region of its influence is above us, and beyond our control; and we might as well pretend to arrest the influx of the swallows in summer, and the woodcocks in the winter season, by cordons of troops and quarantine regulations, as by such means to stay the influence of an atmospheric poison; but in our moral courage, in our improved civilization, in the perfecting of our medical and health police, in the generous charitable spirit of the higher orders, assisting the poorer classes of the community, in the better condition of those classes themselves, compared with the poor of other countries, and in the devoted courage and assistance of the medical profession every where, we shall have the best resources. Trusting to these, it has been found that, in countries far less favoured than ours, wherever the impending pestilence has only threatened a visitation, there the panic has been terrible, and people have even died of fear; but when it actually arrived, and they were obliged to look it in the face, they found, that by putting their trust in what I have just laid down, they were in comparative safety; that the destitute, the uncleanly, above all the intemperate and the debauched, were almost its only victims; that the epidemic poison, whatever it might be, had strength to prevail only against those who had been previously unnerved by fear, or weakened by debauchery; and that moral courage, generous but temperate living, and regularity of habits in every respect, proved nearly a certain safeguard. They found further, that quarantine regulations were worse than useless—that the gigantic military organization of Russia—the rigorous military despotism of Prussia—and the all-searching police of Austria, with their walled towns, and guards and gates, and cordons of troops, were powerless against this unseen pestilence, and that as soon as the quarantine laws were relaxed, and free communication allowed, the disease assumed a milder character, and speedily disappeared.

I say, then, confidently, that cholera morbus never will commit ravages in this country, beyond the bounds of the worst purlieus

of society, unless it be fostered into infectious, pestilential activity, by the absurd, however well-meant, measures of the conservative boards of health, such as have been just recommended in what has always been esteemed the most influential, best-informed journal of England,—I mean the Quarterly Review. If the writer of the article who recommends the enforcement of the ancient quarantine laws in all their strictness, be a medical man, he surely ought to know, that wherever human beings are confined and congregated together in undue numbers, more especially if they be in a state of disease, there the matter of contagion, the typhoid principle, the septic (putrefactive) human poison, or by what other name it may be called, is infallibly generated and extends itself, but in its own impure atmosphere only, as a personal infection to those who approach it, under the form and features of the prevailing epidemic, whatever that may be. Hence we have all heard of contagious pleurisies, catarrhs, dysenteries, ulcers, &c., and if the doctrines of that writer be received, we shall soon also hear of contagious cholera morbus with a vengeance. His exhortations would go to shut up the sick from human intercourse, to proclaim the ban of society against them, and under the most pitiable circumstances of bodily distress, to proscribe them as objects of terror and danger, instead of being, as they actually are, helpless innocuous fellow creatures, calling loudly for our promptest succour and commiseration in their utmost need. They would go further, to array man against his fellow man in all the cruel selfishness of panic terror, sever the dearest domestic ties, paralyse commerce, suspend manufactures, and destroy the subsistence of thousands, and all for the gratification of a prejudice which has been proved to be utterly baseless in every country of Europe from Archangel to Hamburgh and Sunderland. Happily for our country, these measures are now as absurd and impracticable as they would be tyrannical and unjust. They could not be borne even under the despotic military sway of Prussia and Russia, and in this free country it would be impossible to enforce them for a single week. The very attempt would at once, throughout the whole land, produce confusion and misery incalculable.

I say, on the contrary, throw open their dwellings to the free

air of heaven, the best cordial and diluent of foul atmosphere in every disease; let their fellow townsmen hasten to carry them food, fuel, cordials, clothing, and bedding,—speak to them the words of consolation,—and should they have fear to approach the sick, I take it upon me to say, they will be accompanied by any and every medical practitioner of the place, who, in their presence, will minister to the afflicted, inspire their breath, and perform every other professional office of humanity, without the smallest fear or risk of infection; for they read the daily records of their profession, where it has been proved to them, that in the open but crowded hospitals of Warsaw, under the most embarrassing circumstances of warfare and disease, out of a hundred medical men, with their assistants and attendants, frequenting the sick wards of cholera, not one took the disease; that, for the sake of proving its nature, they even went so far as to clothe themselves with the vestments of the dying, to sleep in the beds of the recently dead, and to inoculate themselves in every way with the blood and fluids of the worst cases, without, in a single instance, producing cholera morbus.* The accounts may not, indeed cannot, be the same from every other quarter, for medical men must be as liable to fall under the influence of an atmospherical epidemic disease as other classes of the community; but the above fact is alone sufficient to prove that it cannot be a personal contagion.

Even should that worst of true contagions, the plague of the Levant, which every nation is bound to guard against, despite of all our precautions, be introduced amongst us, measures better calculated for the destruction of a community could scarcely be devised, than the ancient quarantine regulations; for they certainly would convert every house proscribed by their mark into a den and focus of the most concentrated pestilential contagion, ensuring fearful retribution upon those who had thus so blindly shut them up. The mark alone, besides being equivalent to a sentence of death upon all the inmates, would effect all this—the sick would be left to die unassisted, unpurified, uncleansed

* Vide Medical Gazette.

amidst their accumulated contagion, and the dead, as has happened before, lie unburied or scarcely covered in, till they putrified in pestiferous heaps. Most certainly it would be proper and beneficial, even a duty, for all who could afford the means, and were not detained by public duties, to fly the place, and equally proper for the other residents who continued in health, to segregate themselves as they best could. Plenty of free labour amongst those who must ever work for their daily bread, would still remain for all municipal purposes ; and these, our rulers, so far from consenting thus to proscribe the sick, should employ openly in giving them every succour and aid, under the direction and with instructions of safety from a well arranged medical police. It would not be difficult to show, that the mortality, during the last great plague in London, was increased a hundred-fold, by following the very measures now recommended in these regulations ; and that the barbarous predestinarian Turk, in the very head quarters of the plague itself, who despises all regulation, but attends his sick friend to the last, never yet brought down upon his country such calamitous visitations of pestilence, as enlightened Christian nations have inflicted upon themselves, by ill-judged laws. The Turk, to be sure, by rejecting all precaution, and admitting, without scruple, infection into his ports, sees Constantinople invaded by the plague every year ; but, when not preposterously interfered with, it passes away, even amongst that wretched population, like a common epidemic, without leaving any remarkable traces of devastation behind it : and surely, to establish and make a pest-house of the dwelling of every patient who might be discovered or even suspected to be ill, would be most preposterous. The writing on the wall would not be more appalling to the people, and scarcely less fatal to the object, than the cry of mad dog in the streets—with this difference, that when the dog was killed, the scene would be closed, but the proscribed patient would remain, even in his death and after it, to avenge the wrong.

But sufficient to the day is the evil thereof ; the question is now of cholera morbus. I am willing to meet any objection, and the most obvious one that can be offered to me (if it be not an im-

ported disease), is its first appearance in our commercial sea-ports. To this I might answer, that it has been hovering over us, making occasional stoops, for the last six months, even in the most inland parts of the country ; but I will waive that advantage, and meet it on plainer grounds of argument and truth.—An atmospherical poison must evidently possess the greatest influence, where it finds the human race under the most unfavourable circumstances of living, habits, locality, and condition. Now, where can these be met with so obviously as in our large sea-port towns on the lowest levels of the country, and in their crowded alleys, always near to the harbour for the shipping? There the disease, if its seeds existed in the atmosphere, would be most likely to break out in preference to all other situations ; and if at the time of its so appearing, ships should arrive, as they are constantly doing, from all parts of the world, whose crews, according to the custom of sailors, plunge instantly into drunkenness and debauchery, and present, as it were, ready prepared, the very subjects the pestilence was waiting for ; how easy then, for an alarmed or prejudiced board of health to point out the supposed importing vessel, and freight her with a cargo of the new pestilence from any part of the world they may choose to fix upon ! This is no imaginary case ; it was for long of annual occurrence with respect to the yellow fever, both in the West Indies and North America. “ There our thoughtless intemperate sailors were not only the first to suffer from the epidemic, in its course or about to begin, but they were denounced as the importers, by the prejudiced vulgar, and the accusation was loudly re-echoed even amongst the better informed, by all who wished to make themselves believe that pestilence could not be a native product of their own atmosphere and habitations.”

Before I have done, I feel called upon to say a few words upon the efficacy of fumigation as a preservative against cholera morbus and other infectious diseases. In regard to the first, the question is settled. In Russia, throughout Germany, and I believe every where else in Europe, they were productive of no good ; they did mischief, and were therefore discontinued. This has been verified by reports from the seats of the disease every where. In regard

to other contagions, I can speak, not without knowledge, at least not without experience, for it was the business and the duty of my military life, during a long course of years, to see them practised in ships, barracks, hospitals, and cantonments, and I can truly declare I never saw contagion in the smallest degree arrested by them, and that disease never failed to spread, and follow its course unobstructed, and unimpeded by their use. In the well-conditioned houses of the affluent, where ventilation and cleanliness are matters of habit and domestic discipline, they may be a harmless plaything during the prevalence of scarlet fever and such like infections, or even do a little good by inspiring the attendants with confidence, however false, as a preservative against contagion; but in the confined dwellings of the poor they are positively mischievous, because they cannot be used without shutting out the wholesome atmospheric air, and substituting for it a factitious gas, which, for aught we know, or can know, of the nature of the contagious vapour, whether acid, alkaline, or any thing else, may actually be adding to its deleterious principle instead of neutralising it: but in thus striking away a prop from the confidence of the poor, I thank God I can furnish them with other preservatives and disinfectants, which I take it upon me to say, they will find as simple and practicable as they are infallible. For the first, the liberal use of cold water and observance of free ventilation, with slaked lime to wash the walls, and quick lime when they can get it, to purify their dung-heaps and necessities, are among the best; but when actually infected, then heat is the only purificator yet known of an infected dwelling. Let boiling water be plentifully used to every part of the house and article of furniture to which it can be made applicable. Let portable iron stoves, filled with ignited charcoal only, be placed in the apartment closely shut, and the heat kept up for a few hours to any safe degree of not less than 120° Fahrenheit; and let foul infected beds and mattresses be placed in a baker's oven heated to the same;* and, my life for it, no infection can after that possibly adhere to houses, clothes, or

* The oven on that account need not lose character with bread-eaters, for according to the old adage, "Omne vitium per ignem excoquitur."

furniture. The living fountain of infection from the patient himself, constantly giving out the fresh material, cannot of course be so closed; but whether he lives or dies, if the above be observed, he will leave no infection behind him.*

It is now time to bring this tedious letter to a close. I shall be happy, through the same channel, to give any information, or answer any inquiries that may be authenticated by the signature of the writer; but anonymous writing of any kind I shall not consider myself bound to notice. Should the dreaded disease spread its ravages throughout our population, I may then, at some future early opportunity, trusting to your indulgence, trespass again upon your columns with further communications on this most interesting subject.

WILLIAM FERGUSSON,
Inspector-General of Hospitals.

P.S.—Throughout the foregoing letter, I have used the words contagion and infection as precisely synonymous terms, meaning communicability of disease from one person to another.

November 9, 1831.

LETTER II.

TO THE EDITOR OF THE WINDSOR EXPRESS.

SIR,—In my last letter I treated of the practicability of guarding our country against the now European and Continental disease, malignant cholera morbus, by quarantine regulations. In the present one, it is my intention still in a popular manner to scrutinise more deeply the doctrine of imported contagions; to point

* Light, too, more especially when assisted by a current of atmospheric air, is a true and sure disinfectant; but it is not so applicable as heat in the common contagions, from requiring an exposure of the infected substances for days together, or even a longer period, before it can be made effective.

out, if I can, those true contagions which can be warded off by our own exertions, in contradistinction to others which are altogether beyond our control: and here it may be as well to premise, that when I use the term epidemic, I mean atmospheric influence, endemic-terrestrial influence, or emanation from the soil; and by pestilential, I mean the spread of malignant disease without any reference to its source. The terms contagion and infection have already been explained.

It must be evident, that legislative precaution can only be made applicable to the first of these. The last, being unchangeable by human authority, are not to be assailed by any decrees we can fulminate against them; and if it can be shown, which it has been by our best and latest reports, that cholera morbus eminently and indisputably belongs to that class—that the strictest cordons of armed men could not avail to save the towns of the continent, nor the strictest quarantine our own shores, from its invasion—it surely must be time to cease those vain attempts, to lay down the arms that have proved so useless, and turn our undivided attention, now that it has fairly got amongst us, to conservative police, and the treatment of the disease; but as the contagionists still insist that it was imported from Hamburgh to Sunderland, it behoves us to clear away this preliminary difficulty before proceeding to other points of the enquiry.

I take it for granted, that ships proceeding from Sunderland to Hamburgh could only be colliers, and that according to the custom of such vessels, they returned, as they do from the port of London, light; and I admit, that on or about the time of their return, Cholera Morbus, under the severe form which characterises the Asiatic disease, made its appearance in that port, presenting a fair *prima facie* case of imported contagion; but as at the period of its thus breaking out in Sunderland, a case equally as fatal and severe shewed itself, according to the public accounts, in the upper part of Newcastle, 10 miles off; another, equally well-marked, in a healthy quarter in Edinburgh; a third, not long before in Rugby, in the very centre of the kingdom; and a fourth in Sunderland itself, as far back as the month of August,

as well as many others in different parts of the country;* it became incumbent on the quarantine authorities, indeed upon all men interested in the question, whether contagionists or otherwise, to shew the true state of these vessels, as well as of the cases above alluded to, and whether the cholera morbus had ever been on board of them, either at Hamburgh or during the homeward voyage, so as by any possibility they could have introduced the disease into an English port. Now will any person pretend to say that this has been done, or that it could not have been done, or deny that it was a measure, which, if properly executed, would have thrown light upon the true character of the disease, not only for the information of our own government but of every government in Europe; that deputations from the Board of Health, backed and supported by all the power and machinery of government, with the suspected ships locked up in quarantine, and the persons of the crews actually in their power, could not have verified to the very letter, the history of every hour and day of their health, from the moment of their arrival at Hamburgh till their return into port? This measure was so obviously and imperiously called for, as constituting the only rational ground on which the importing contagionists could stand, or their opponents meet them in argument, that after having waited in vain for the report, I raised my own feeble voice in the only department to which I had access, urging an immediate, though then late, investigation. No good cause, having truth for its basis, could have been so overlooked, and without unfairness or illiberality, we are irresistibly forced to the conclusion, that had the enquiry (the only one, by the by, worth pursuing, as bearing directly on the question at issue) been pushed to the proof, it would have shown the utter nullity of quarantine guards against atmosphe-

* Two of a type most unusual for this country, and the winter season, have occurred in the vale of the Thames, not far from here, which, as they both recovered, and the disease did not spread in any way, were very properly allowed to pass without sounding any alarm, but the gentleman who attended one of the cases, and had been familiar with the disease in India, at once recognized it again in its principal distinguishing features.

rical pestilence, the thorough baselessness of the doctrine of importation.

Without entering into the miserable disputes on this subject, which, amidst a tissue of fable and prejudice, self-interest and misrepresentation, have so often disgraced the medical profession at Gibraltar, I shall now proceed to shew, by reference to general causes, how baseless and mischievous have been the same doctrines and authority when exercised in that part of the British dominions.

Within the last thirty years, yellow fever has, at least four times, invaded the fortress of Gibraltar; during which time also the population of its over-crowded town has more than quadrupled, presenting as fair a field, for the generation within, or reception from without, of imported pestilence as can well be imagined,—yet plague, the truest of all contagions, typhus fever, and other infectious diseases, have never prevailed, as far as I know, amongst them. The plague of the Levant has not been there, I believe, for 150 years; yet Gibraltar, the free port of the Mediterranean, open to every flag, stands directly in the course of the only maritime outlet, from its abode and birth-place in the east; being, in fact, to use the language of the road, the house of call for the commerce of all nations coming from the upper Mediterranean. Now, can there be a more obvious inference from all this, than that the plague, being a true contagion, may be kept off without difficulty by ordinary quarantine precautions; but the other, being an endemic malarious disease, generated during particular seasons, within the garrison itself, and the offspring of its own soil, is altogether beyond their control? The malarious or marsh poison, which in our colder latitudes produces common ague, in the warmer, remittent fever, and in unfavourable southern localities of Europe, (such as those of crowded towns, where the heat has been steadily for some time of an intertropical degree)—true yellow fever, which is no more than the highest grade of malarious disease; but this has never occurred in European towns, unless during the driest seasons—seasons actually blighted by drought, when hot withering land winds have destroyed surface vegetation, and, as in the locality of Gibraltar, have left the low-

lying, becalmed, and leeward town, to corrupt without perfusion or ventilation amidst its own accumulated exhalations. I know not how I can better illustrate the situation of Gibraltar in these pestiferous seasons, than by a quotation from a report of my own on the Island of Gaudaloupe, in the year 1816, which, though written without any possible reference to the question at issue, has become more apposite than any thing else I could advance. “ All regular currents of wind have the effect of dispersing malaria ; when this purifying influence is withheld, either through the circumstances of season, or when it cannot be made to sweep the land on account of the intervention of high hills, the consequences are most fatal. The leeward shores of Guadaloupe, for a course of nearly 30 miles, under the shelter of a very steep ridge of volcanic mountains, never felt the sea breeze, nor any breeze but the night land-wind from the mountains ; *and though the soil, which I have often examined, is a remarkably open, dry, and pure one, being mostly sand and gravel, altogether, and positively without marsh, in the most dangerous places, it is inconceivably pestiferous throughout the whole tract, and in no placemore so than the bare sandy beach near the high water mark.* The coloured people alone ever venture to inhabit it ; and when they see strangers tarrying on the shore after nightfall, they never fail to warn them of their danger. The same remark holds good in regard to the greater part of the leeward coasts of Martinique, *and the leeward alluvial bases and recesses* of hills, in whatever port of the torrid zone they may be placed,* with the exception, probably, of the immediate sites of towns, where the pavements prevent the rain-water being absorbed into the soil, and hold it up to speedy evaporation.” Now, conceive a populous crowded town placed in this situation, and you have exactly what Gibraltar and the other towns of Spain and North America, liable to yellow fever, must become in such seasons as I have above described ; only, that as they grow more populous and crowded, the danger must

* The leeward niches and recesses of hills, however dry and rocky, become, in these seasons of drought, absolute dens of malaria : this will be found proven in my reports more especially of the islands of Dominique and Trinidad, which may be seen at the Army Medical Board Office.

be greater, and its visitations more frequent, unless the internal health police be made to keep pace in improvement with the increasing population.

Now, in the name of injured commerce—of the deluded people of England—of medical science—of truth and humanity—what occasion can there be to institute an expensive quarantine against such a state of things as this, which can only be mitigated by domestic health police; or why conjure up the unreal phantom of an imported plague, to delude the unhappy sufferers, as much in regard to the true nature of the disease, as to the measures best calculated for their own preservation; when it must be evident that the pestilence has sprung from amidst themselves, and that had it been an external contagion in any degree, the ordinary quarantine, as in case of the plague, would certainly have kept in off? But the question of the contagion of yellow fever, so important to commerce and humanity, and which, like the cholera, has more than once been used to alarm the coasts of England, demands yet further investigation.

For nearly 40 years have the medical departments of our army and navy been furnished with evidence, from beyond the Atlantic, that this disease possessed no contagious property whatever. These proofs now lie recorded by hundreds in their respective offices, and I take it upon me to say, they will not be found contradicted by more than one out of a hundred, amongst all the reports from the West Indies, which is as much the birth-place of the yellow fever as Egypt is of the plague; yet, in the face of such a mass of evidence, as great or greater probably than ever was accumulated upon any medical question, has our Government been deluded, to vex commerce with unnecessary restraints, to inflict needless cruelties upon commercial communities, (for what cruelty can be greater than, after destroying their means of subsistence by quarantine laws, to pen them up in a den of pestilence, there to perish without escape, amidst their own malarious poison?) and to burden the country with the costs of expensive quarantine establishments. Surely if these departments had done their duty, or will now do it, in so far as to furnish our rulers with an abstract of that evidence, with or without their own

opinions—for opinions are as dust in the balance when put in competition with recorded facts—it must be impossible that the delusion could be suffered to endure for another year, ; or should they unluckily fail thereby to produce conviction on Government, they can refer to the records of commerce, and of our transport departments, which will shew, if inquiry be made, that no ship, however deeply infected before she left the port, (and all ships were uniformly so infected wherever the pestilence raged) ever yet produced, or was able to carry, a case of yellow fever beyond the boundaries of the tropics, on the homeward voyage, and that therefore the stories of conveying it beyond seas to Gibraltar must have been absolutely chimerical. It would, indeed, have been a work of supererogation, little called for, for I think I have fully shown that Gibraltar must be abundantly qualified to manufacture yellow fever for herself.

No less chimerical will be the attempt to shut out cholera morbus from our shores by quarantine laws, because throughout Europe, ready prepared, alarmed, and in arms against it, they have succeeded nowhere ; whereas, had it been a true contagion, and nothing else, they must, with ordinary care, have succeeded everywhere ; the disease, as if in mockery, broke through the cordons of armed men, sweeping over the walls of fortified towns, and following its course, even across seas, to the shores of Britain ; and yet we are still pretending to oppose it with these foiled weapons.

We are indeed told, by authority, that its appearance in towns has always been coincident with the arrival of barges from inland, or by ships from the sea ; but if it be not shown at the same time that the crews of these barges had been infected with the disease, or if, as at Sunderland, no person on board the ships can be identified as having introduced it, while we know that the disease actually was there two months before, we may well ask at what time of the year barges and ships do not arrive in a commercial seaport, or where an epidemic disease, during pestiferous seasons, could be more likely to break out than where the most likely subjects are thrown into the most likely places for its explosion—such as newly arrived sailors in an unwholesome sea-port, where

the license of the shore, or the despondency of quarantine imprisonment, must equally dispose them to become its victims? Besides, what kind of quarantine can we possibly establish, with the smallest chance of being successful, against men who have not got, and never had the disease? Merchandise has been declared incapable of conveying the infection*, and are we to interdict the hulls and rigging of vessels bearing healthy crews, or are we to shut our ports at once against all commerce with the North of Europe, and would this prove successful if we did? A reference to a familiar epidemic will I think at once answer this question.

It is only three months ago that epidemic catarrh or influenza spread throughout the land, travelling like the cholera in India, when it went up the monsoon, without regard to the East wind; and what could be more likely than the blighting drying process of such a wind, in either the one or the other case, to prepare the body for falling under the influence of whatever disease might be afloat in the atmosphere? In general this passing disease can be distinctly traced as having affected our continental neighbours on the other side of the channel before ourselves: now can it be supposed that any quarantine could have prevented its first invasion, or arrested its farther progress amongst us? How ridiculous would have been the attempt! and yet, with the experience of all Europe before us, have we been enacting that very part with the cholera morbus: but further, the same authority which calls for the establishment of quarantine in our ports, tells us that neither proximity nor contact with the sick† is requisite for the production of the disease: now can anything further be wanting beyond this admission, to prove that it must be an epidemic atmospherical poison, and not a personal contagion, and that, under such circumstances, the establishment of quarantine against persons and goods would manifestly be absurd and uncalled for? So fully satisfied has the Austrian Government been made, by experience, of the futility and cruelty of such quarantines, that the Emperor apologises to his subjects for having inflicted them. The King of Prussia makes a similar *amende*, and the Emperor

* Vide Russian Ukase.

† Vide Reports from Russia.

of Russia, convinced by the same experience, abolished or generally relaxed his quarantines several months ago.

I am by no means prepared to assert, because I cannot possibly know to the contrary, although from the analogy of other disease I do not believe it, that the cholera morbus may not become contagious under certain conditions of the atmosphere; but these cannot be made subject to quarantine laws, and I am fully prepared to acknowledge, that, as in the case of other epidemics, it may be made contagious through defective police; but independent of these, it possesses other powers and qualities of self diffusion, which we can neither understand nor controul. Such, however, is not the case with that other phantom of our quarantine laws—the yellow fever—which can never, under any circumstances of atmosphere, without the aid of the last, be made a contagious disease. I speak thus decisively, from my experience of its character as one of the survivors of the St. Domingo war, where, in a period of a little more than four years, nearly 700 British commissioned officers, and 30,000 men, were swept away by its virulence; as also from subsequent experience, after an interval of 20 years, when, in the course of time and service, I became principal medical officer of the windward and leeward colonies, and in that capacity surveyed and reported upon the whole of these transatlantic possessions.

It was my intention, in these times of panic, to designate to my countrymen, in as far as I could, the true essential intrinsic contagions of the British Isles, (for such there are, and terrible ones too,) which prevail under all circumstances of season, atmosphere, and locality, as contradistinguished from the factitious ones, of our own creating, and the imaginary or false which often spread epidemically, (for there may be an epidemic as well as contagious current of disease)* although they possess no con-

* For as long as men congregate together, and every supposable degree of communication must of necessity be constantly taking place amongst them, to distinguish a spreading epidemic from a contagious disease when it first breaks out, must obviously be a matter of impossibility; and upon this point the contagionists and their antagonists may rail for ever,—the one will see nothing but contagion, whether in the dead or the living body, and the other will refer

tagious property whatever; as well as the foreign contagions, which, if we relax in due precaution, may, at any time, be introduced amongst us: but the unreasonable length of this letter, for a newspaper communication, warns me to stop.

I have written thus earnestly, because I deeply feel what I have here put down. It is possible I may have made mistakes, but if I have, they are not intentional, and I shall be happy to be corrected, for I do not live at the head-quarters of communication, and my broken health prevents my frequenting in person the field of investigation. In candour I ought to declare, that the establishment of quarantine against this new and heinous pestilence in the first instance, was the most sacred duty of Government, but now that its character has been made known, and the futility of quarantine restrictions demonstrated, I feel equally bound, as one of the lieges, to enter my humble protest against their continuance.

Should I write again, I shall still adopt the same popular style, for no other can be adapted to a newspaper communication, and the subject-matter is as interesting to the public, and every head of a family, as it can be to the professional reader: and, in thus making use of your columns, as I can have no motive but that of ardent research after truth, I know that I may always rely upon your assistance and co-operation.

WILLIAM FERGUSSON,

Inspector-General of Hospitals.

Windsor, Nov. 26, 1831.

every fresh case to atmospheric or terrestrial influence, and both with as much apparent reason as they possibly could desire: but the candid impartial investigator, who waits to observe the course of the disease before coming to a conclusion, and refers to the facts furnished in the Cholera Hospitals of Warsaw and the sick quarters of Sunderland, will never be deceived in regard to its real nature, nor propagate the appalling belief that Cholera Morbus can be made a transportable and transmissible contagion.

LETTER III.

TO THE MEDICAL SOCIETY OF WINDSOR.^s

In this paper it is my intention to treat of the contagious diseases of the British Isles, as well as to offer to the Society some observations on malignant cholera morbus, and the mode of its propagation from the tropical regions, where it first arose, to the colder latitudes of Europe.

Having already published two letters on this last part of my subject, I need not here take up your time in recapitulating their contents, but proceed to the consideration of some remaining points of the inquiry; which I find I have either overlooked, or not been so explicit in illustration, as I otherwise might, had I been addressing a body of professional men, instead of the community where I live, with the view of *disabusing* their minds from the effects of irrational panic, and opening their eyes to what I deemed true measures of preservation against the impending disease; and here I may as well add, that when I wrote in a newspaper, and adopted the style suited to such a channel of communication, I knew none so likely to attract the attention of those influential men, who might possess the power and the will, when disabused of prejudice, to enforce proper laws, instead of running the course that had already been imposed upon them, by men interested in the upholding of our quarantine establishments, or by prejudiced, however well meaning, Boards of Health.

In looking over those letters, I find that the points most open to dispute are the course of the disease throughout the Indian peninsula, and its progress to the frontiers of Russia; as well as its supposed infectious nature, and mode of propagation by human intercourse. In regard to the first, there is no contagionist, however avowed and uncompromising, who does not admit that this erratic disease did not often wander from its straight line when the most promising fields lay directly before it; or stop short

most unaccountably in its progress, when the richest harvest of victims seemed actually within its jaws—that its course was circuitous when, according to the laws of contagion, it ought to have been straight—that it refused its prey at one time, and returned to it at another, in a manner that showed its progress was governed by laws which we could neither understand nor control; and if we search the reports of contagionist writers, we shall find fully as much, and as strong evidence of its progress being independent of human intercourse, as of its being propagated and governed by the laws of contagion.*

To the question, which has so often been triumphantly asked, of its progress to the Russian frontiers being conducted by caravans along the great highways of human intercourse—and what else than contagion could cause it to be so carried?—an admirable journalist has already replied, by asking, in his turn, on what other line than amongst the haunts of men could we possibly have found or detected a human disease? And surely the question is most pertinent, for in those barbarous regions that interpose between Russia and India, where the wolf and the robber hold divided alternate sway, and isolated man dares not fix his habitation, but must congregate for safety; where else than in those great thoroughfares could the disease have found its food? or if beyond these, man, almost as ignorant and as savage as the wolf, could have been found, who, under such circumstances, would have recognised, described, and testified to its existence? Even at Sunderland, amongst ourselves, its existence was long hotly disputed by the learned of the faculty; and the fatalist barbarian of these regions would have dismissed the inquiry with a prayer of resignation, while he bowed his head to the grave; or, if his strength permitted, with a stroke of his dagger against the impious inquirer who had dared to interfere with the immutable decrees of fate. The stories, too, of its importation into Russia, are exactly the same as have come to us from our own Gibraltar, in the case of the yellow fever, and may be expected to come from every other quarter where a well-paid officious quarantine is esta-

* Vide Orton, Kennedy, &c.

blished to find infection in its own defence, and to trace its course in proof of their own services and utility. Under such circumstances, this well gotten up drama of importation may be rehearsed in every epidemic, adapted in all its parts to every place and every disease they wish to make contagious. First will be presented, as at Gibraltar, the actual importers—their course traced—the disease identified—its reception denounced, and quarantine established; and this will go down, until sober-minded disinterested men become engaged in the inquiry, when it will turn out, in all probability, that the importers, as at Sunderland, never had the disease—that it was in the place long before their arrival—that in its supposed course, it either had no existence, or had long ceased,—in fact, that the importation was a fable, the product either of design or an alarmed imagination. On this point I shall not here farther dwell, but proceed to the still keenly disputed question of its contagious or non-contagious nature.

Amongst all those who have advocated the affirmative side of the question, an anonymous writer in the *Lancet*, of Nov. 19th, seems to me the ablest special pleader of his party, and the best informed on the subject, which he has grappled with a degree of acumen and power that must at once have secured him the victory, in any cause that had truth for its basis, or that could have stood by itself; but strong and scornful as he is, he has himself furnished the weapons for his own defeat, and has only to be correctly quoted in his own words, for answer to the most imposing and powerful of his arguments. I take it for granted, that no one will give credit to instantaneous infection, at first sight, but allow that an interval must elapse between the reception of the virus and explosion of the disease. Kennedy and the best of the contagionist authors, have fixed the intervening time from two days to a longer uncertain period; yet that writer (in the *Lancet*) proceeds to tell us, in proof of the virulence of the contagion, that when twenty healthy reapers went into the harvest field at Swedia, near Tripoli, and one of them at mid-day was struck down with the disease, he then instantly—as if, instead of being prostrate on the ground, he had run amuck for the propagation of cholera morbus—infected all the rest, so that the whole were down within three

hours, and all were dead before the following morning*—All this too in the open air. Another writer of note relates that when a healthy ship on the outward voyage arrived in Madras Roads, her people were seized with cholera morbus that very morning: but they go further than this, and command us to believe in its contagious powers, without sight at all, quoting the report from our Commissioners in Russia, where it is officially announced “that neither the presence nor contact of the patient is necessary to communicate the disease.” Surely in candour we may be allowed to say that when they limit their views to contagion alone, they have attributed powers to it, which it never did, and never can possess. That some other principle, besides their favourite one, must have been in operation, as well in the field of Swedia, when it struck down the reapers, as when it blighted our armies in the East, for these sudden bursts and explosions of pestilence are incompatible with the laws and progress of natural contagion,—that if, under a tropical temperature, which dissipates all infection, there be contagion in the disease, there must also be other powers of diffusion hitherto inscrutable, incomprehensible, and uncontrollable,—that their doctrine of contagion exclusively, is superficial, narrow, and intolerant, and their arguments in support of it no more than a delusion of prejudice, a piece of consummate special pleading to make the worse appear the better reason.†

Before concluding these observations, I would wish to make a few remarks upon some points of the inquiry which have been either too cursorily passed over, or not noticed at all; and first, of its supposed attraction for, and adherence to, the lines and courses of rivers, whether navigable or otherwise. I do not think this quality of the disease has been assumed on grounds sufficient

* The precise words are, “20 peasants of Swedia, robust, vigorous, and in the flower of life, were labouring at the harvest work, when, on the 9th of July, at noon, one was suddenly attacked, and the others in a short time showed symptoms of the disorder. In three hours, the entire band was exhausted; before sunset many had ceased to live, and by the morrow there was no survivor.”

† The remainder of the paper, as presented to the Society, treated of typhus fever, and other matter, that had no reference to the disease in question.

to justify anything like an exclusive preference. Along these lines, no doubt, it has very frequently been found, because a malarious, a terrestrial, a contagious, or indeed any other disease, would, for many reasons, best prevail on the lowest levels of the country, or the deepest lines on its surface, like the valleys of rivers, provided the food on which it fed—population—there abounded. It would be difficult almost anywhere to point out a populous city connected with the sea, rivers, or canals, the water population of which, from their habits of life and occupations, everywhere crowded, dirty, careless, and exposed, must always afford ready materials for any epidemic to work upon, and this may have given currency to the prevailing opinion ; but I rather believe, when inquiry comes to be made, it will be found that the worst ravages of Cholera Morbus have been experienced in the great level open plains of Upper Germany, and the boundless jungly districts of India, remote from, or at least unconnected with, water communication ; denoting thereby atmospheric influence and agency, rather than any other.

Another consideration of some importance is the burial of the dead, which, according to published reports, has in some places been enforced in so hurried a manner as deeply to wound the feelings of surviving relatives, and in others to give rise to the horrid suspicion of premature interment. Can this have been necessary in any disease, even allowing it to be contagious ? or was it wise and dignified in the medical profession to make this concession to popular prejudice—at all times, when excited, so unmanageable and troublesome ? Although we cannot analyse the matter of contagion, we surely know enough of it to feel assured that it must be a production and exhalation from the living body, arising out of certain processes going on there, in other words out of the disease itself, which disease must cease along with the life of the patient, and the exhalation be furnished no longer—that during life it was sublimed, so as to leave the body and become diffused around through the agency of the animal heat, created by the functions of respiration and circulation of the blood, which being foreclosed and the supplies cut off, all that remained of it floating

before death in the atmosphere, must be condensed upon the cold corpse, and lie harmless.* It must also be evident that when putrefaction begins, no production of what belonged to the living body can remain unchanged, but must undergo the transformation in form, substance, and quality, ordained for all things; for putrefaction, although it may possibly produce a disease after its own character, is not pestilence, nor even compatible with it in the case of specific diseases.

The puerile stories, therefore, of infection being taken from following a confined corpse to the grave, without reference to the state of grief, fear, and fatigue, not improbably of drunkenness, in the mourners, must be unworthy of attention. I am no friend to the absurdly long interval which in this country is allowed to elapse,† even in the hottest weather, between death and burial; but still more do I deprecate the indecent haste which would give sanction to panic, and incur the risk or even the suspicion of interment before dissolution. In regard to separate burying grounds, should the disease come to spread, I am sure no one will expect, after what has just been said, that I should attempt to argue the question seriously, nor enter a protest against the further gratuitous wrong of withholding the rites of sepulture in consecrated ground from the victims of an epidemic or even a contagious disease.—Nothing could warrant such a measure but want of room in the ordinary churchyards, where police should never be allowed to interfere with the rights and feelings, or property, of the living, unless to ensure the privacy of funerals; nothing being so appalling to an

* Even when a living product, we are authorised to believe, from observations made upon the plague, that it cannot be propelled to a greater distance than a few feet from the body of the patient—that it is heavier than common air, settling down in a remarkable manner upon the sick bed, and saturating the lower strata of the atmosphere in the sick apartment.

† After sending these letters to the press, I saw in the public prints that the Bishop of the Diocese had forbidden the funerals of the dead from Cholera to be received in the churches of London. Instead of thus forbidding a part, better have the whole of the service performed there (where crowds do not come) under cover from the weather, than in the open churchyard, where the mourners, uncovered, are exposed in every way to damp and cold, and the jostling of the mob; better still, have all the service deemed necessary performed at the residence of the deceased.

alarmed people as the spectacle of death in their streets, or so trying to the health of the mourners as tedious funeral ceremonies amidst a crowd of people.

Were I called upon to criticise what I have now written, and to review all that I have seen, read, and heard on the subject, I would conscientiously declare that the importation of cholera morbus into England, or any where else, had been clearly negatived, and its non-contagious character almost as clearly established; always however with the proviso and exception of the possibility of its being made a temporary contingent contagion, amidst filth and poverty, and impurity of atmosphere, from overcrowding and accumulation of sick, but neither transmissible nor transportable out of its own locality, through human intercourse. As the disease, like all the other great plagues, which at various periods have desolated the earth, evidently came from the east, it would be most desirable, in pursuing our investigation, to have a clear knowledge of the mode of its introduction into Russia on the eastern boundary of Europe. Unfortunately we can place no dependence upon the reports that have been published to prove importation there, which are lame and contradictory, although coming from the avowed partizans of contagion; but even had they been better gotten up, we could not, unless they had been confirmed by the experience of other nations, have received them with implicit reliance.

The Russian Employé of the provinces, *mendacior Parthis*, not from greater innate moral depravity than others, but from the corruptions of a despotic government, which compel him to live under the rod of a master, amidst a superstitious barbarous population, whose dangerous prejudices he dare not offend, can only give utterance to what his tyrants command. Even at the more civilized capital of Petersburg, the mob rose in arms to murder the foreign physicians, when they did not act according to their liking. Could the truth, then, be heard on such a field? or what native officer would venture to impugn the authority of his rulers, proclaiming contagion? If he did, he must cease to live, in the official sense of the word. Throughout Europe, from east to west, the disease has followed its own route according to its own incom-

prehensible laws, despite of every obstacle and precaution. We have the authority of our own Central Board for believing that the disease cannot be conveyed by merchandize of any kind, and that of our mission to Russia, for greatly doubting whether it can adhere to personal clothing or bedding; and will it be pretended that human beings, labouring under such a distemper in any form, could have been the vehicles of spreading it in a straight line for thousands of miles throughout civilized nations, armed and prepared to defend themselves against its inroads? They tried, but in vain. We, too, may strive to discover the demon of the pestilence amidst the clouds of the climate, or the winds of Heaven. He remains hidden to our view; and, until better revealed, it only remains for us to exercise towards our fellow men those duties which humanity prompts, civilization teaches, and religion enjoins.

POSTSCRIPT.

My friend Dr. Stanford, of the Medical Staff, now settled here, has given me the following valuable information, which my own observation confirms, regarding the agency of panic in promoting the diffusion of epidemic disease. He happened to be serving with part of the British army, at Cadiz, when an eruption of yellow fever took place there, in the autumn of 1813, and, as usually happens amongst medical men, the first time they had seen that fever, some of them were staunch contagionists, and impressed that belief upon the corps to which they belonged. In all these the disease was most fatal to great numbers. The men being half dead with fear before they were taken ill, speedily became its victims, to the great terror and danger of their surviving comrades; but in the other

regiments, where no alarm had been sounded, the soldiers took the chances of the epidemic with the same steady courage they would have faced the bullets of the enemy in the lottery of battle, escaping an attack for the most part altogether, or if seized, recovering from it in a large proportion. From this picture let us take a lesson, in case the impending epidemic should ever come to spread in the populous towns of England, and the cry of contagion be proclaimed in their streets. The very word will spread terror and dismay throughout the people, causing multitudes to be infected, who would otherwise, in all probability, have escaped an attack, and afterwards consign them to death in despair when they find themselves the marked and fated victims of a new plague. Whatever they see around them must confirm and aggravate their despair, for desertion and excommunication, in all dangerous diseases, too certainly seal the fate of the patient. It will be vain to tell them that hiring attendance has been provided—the life of the choleraic depends upon the instant aid, the able-bodied willing aid of affectionate friends, who will devote themselves to the task, and persevere indefatigably to the last. If these be driven from his bed his last stay is gone, for, without their active co-operation, the best prescription of the physician is only so much waste paper. What, let me ask, must have been the fate of the patient, and what the consequent panic, if the case of cholera that occurred in London, a month ago, at the Barracks of the Foot Guards, had been proclaimed and treated as a contagion? The poor fellow was promptly surrounded by his fearless comrades, who with their kind hands recalled and preserved the vital heat on the surface, by persevering in the affectionate duty of rubbing him for many hours; but had the medical staff of the regiment been true contagionists, they must, as in duty bound, have commanded and compelled every one of them to fly the infection. It depended upon them to have spread around a far wilder and more dangerous contagion than that of cholera morbus, or any other disease—the contagion of fear; and from what occurred at Cadiz, as above related, it is to be hoped our medical men will now see how much they will have have it in their power, when cholera comes, to pronounce or to withhold sentence of desolation upon a community. The word

contagion will be the word of doom, for then the healthy will fly their homes, and the sick be deserted; but a countenance and bearing devoid of that groundless fear, will at once command the aid and inspire the hopes that are powerful to save in the most desperate diseases.

It is stated, in a Scotch newspaper, that two poor travellers, passing from Kirkintulloch to Falkirk, ran the risk of being stoned to death by the populace of the latter place, and were saved from the immolation only by escaping into a house; and in an Irish one, that some shipwrecked sailors incurred a similar danger. Such barbarities must, in the nature of things, be practised every where under a reign of terror, however humane or christianized the people may be—even the fatalism of the Turk would not be proof against it. In Spain they have been enacted in all their horrors (thanks to the quarantine laws!) upon the unfortunate victims of yellow fever*; and we shall soon see them repeated amongst ourselves, unless the plain truth be promulgated by authority of the people. Let them be told, if such be the pleasure of our rulers (for it is not worth while disputing the point), that cholera morbus is a contagion, but of so safe a nature in regard to communicability, that not one in a hundred, or even a thousand, takes the disease,—that in this country, besides being a transient passing disease, which, according to certain laws and peculiarities of its own, will assuredly take its departure in no long time, it is limited almost always to particular spots and localities—that it is in their own power, while it remains, to correct the infectious atmosphere of these spots by attention to health police—that they may fearlessly approach their sick friends with impunity, for that the danger resides in the above atmosphere, and not in the person of the patient—and that in all situations they may defy it, for as long as they observe sobriety of life and regularity of habits. Thus will public confidence be restored, and thus be verified the homely adage of “honesty, in all human affairs, being ever the best policy;” for the concealment or perversion of the truth, however much it

* Vide O'Halloran, upon the Yellow Fever in Spain.

may be made to serve the purposes of the passing day, can never ultimately promote the ends of good government and true humanity, but must lead, sooner or later, to the exposure of the delusion, or, what would be far worse, to the perpetuation of error and prejudice, and grossest abuse of the people, in regard to those interests committed to our charge.

THE END.

NEW WORKS

IN

GENERAL AND MISCELLANEOUS LITERATURE,

PUBLISHED BY

LONGMAN, BROWN, GREEN, AND LONGMANS,

Paternoster Row, London.

CLASSIFIED INDEX.

Agriculture and Rural Affairs.

	Pages.
Baydon On valuing Rents, &c.	4
Crocker's Land-Surveying	7
Davy's Agricultural Chemistry	8
Greenwood's (Col.) Tree-Lifter	11
Hannam on Waste Manures	12
Johnson's Farmer's Encyclopædia	15
Loudon's Encyclop. of Agriculture	18
" Self-Instruction for Farmers, &c.	17
" (Mrs.) Lady's Country Companion	17
Low's Elements of Agriculture	19
" Breeds of the Domesticated Animals of Great Britain	18
" On Landed Property	19
" On the Domesticated Animals	19
Whitley's Agricultural Geology	32

Arts and Manufactures.

Brande's Dictionary of Science, &c.	5
Budge's Miner's Guide	5
DeBurtin on the Knowledge of Pictures	8
Eastlake's History of Oil Painting	9
Gruner's Decorations of the Queen's Pavilion	11
Gwilt's Encyclop. of Architecture	11
Haydon On Painting and Design	12
Holland's Manufactures in Metal	13
Loudon's Encycl. of Rural Architect.	18
Maitland's Church in the Catacombs	20
Porter's Manufacture of Silk	25
" Porcelain & Glass	25
Reid (Dr.) On Ventilation	25
Steam Engine, by the Artisan Club	28
Ure's Dictionary of Arts, &c.	31
" Supplement to Ditto	31

Biography.

Aikin's Life of Addison	3
Bell's Lives of eminent British Poets	4
Dover's Life of the King of Prussia	8
Dunham's Early Writers of Great Britain	9
" Lives of British Dramatists	9
Forster's Statesmen of the Commonwealth of England	9
" (Rev. C.) Life of Bp. Jebb	10
Gleig's British Military Commanders	10
Grant's (Mrs.) Memoir and Correspondence	10
James's Life of the Black Prince	15
" Foreign Statesmen	15
Leslie's Life of Constable	17
Life of a Travelling Physician	17
Mackintosh's Life of Sir T. More	19
Mauder's Biographical Treasury	21
Mignet's Antonio Perez and Philip II.	21
Robert's Duke of Monmouth	26
Roscoe's Lives of British Lawyers	26
Russell's Bedford Correspondence	4
Shelley's Literary Men of Italy, Spain, and Portugal	27
" Lives of French Writers	27
Souther's Lives of the Admirals	28
" Life of Wesley	28
Townsend's Lives of 12 Eminent Judges	30
Waterton's Autobiography & Essays	31

Books of General Utility.

Acton's Cookery	3
Black's Treatise on Brewing	4
" Supplement on Bavarian Beer	4
Collegian's Guide (The)	6
Donovan's Domestic Economy	8
Hand-book of Taste	12
Hints on Etiquette	12
Hudson's Parent's Hand-book	14
" Executor's Guide	14
" On Making Wills	14
Loudon's Self-Instruction	17
Mauder's Treasury of Knowledge	21
" Biographical Treasury	21
" Scientific and Literary Treasury	21
" Treasury of History	21
" Universal Class-Book	21
Parker's Domestic Duties	23
Pycroft's (Rev. J.) English Reading	25
Riddle's Latin-Eng. Dictionaries	25

	Pages
Robinson's Art of Curing, Pickling, &c.	26
Short Whist	27
Thomson On the Sick Room	30
Thomson's Interest Tables	30
Tomlins's Law Dictionary	30
Webster's Domestic Economy	32

Botany and Gardening.

Abercrombie's Practical Gardener and Main's Gardener's Companion	3
Calcott's Scripture Herbal	6
Conversations on Botany	7
Drummond's First Steps to Botany	9
Glendinning On the Pine Apple	10
Greenwood's (Col.) Tree-Lifter	11
Henslow's Botany	12
Hoare On Cultivation of the Vine	12
" On the Roots of Vines	12
Hooker's British Flora	13
" and Taylor's Muscologia Britannica	13
Jackson's Pictorial Flora	15
Lindley's Theory of Horticulture	17
" Guide to the Orchard and Kitchen Garden	17
" Introduction to Botany	17
" Flora Medica	17
" Synopsis of British Flora	17
Loudon's Hortus Britannicus	18
" Lignosis Londinensis	18
" Self-Instruction for Gardeners, &c.	17
" Encyclop. of Trees & Shrubs	18
" Gardening	17
" Plants	18
" Suburban Gardener	18
Repton's Landscape Gardening	25
Rivers's Rose Amateur's Guide	26
Rogers's Vegetable Cultivator	26
Schleiden's Scientific Botany	26
Smith's Introduction to Botany	23
" English Flora	27
" Compendium of Eng. Flora	27

Chronology.

Blair's Chronological Tables	4
Calendar (Illuminated) & Diary, 1846	14
Nicolas's Chronology of History	23
Riddle's Ecclesiastical Chronology	25
Tate's Horatius Restitutus	29

Commerce & Mercantile Affairs.

Lorimer's Letters to a Young Master Mariner	17
M'Culloch's Dictionary of Commerce and Commer. Navigation	19
Steel's Shipmaster's Assistant	28
Thomson's Interest Tables	30
Walford's Customs' Laws	31

Geography and Atlases.

Butler's Sketch of Ancient and Modern Geography	6
" Atlas of Modern Geography	6
" Ancient do.	6
Cooley's World Surveyed	6
De Strzelecki's New South Wales	8
Forster's Hist. Geography of Arabia	10
Hall's New General Atlas	11
M'Culloch's Geographical Dictionary	20
Murray's Encyclop. of Geography	23
Ordnance Maps and Publications of the Geological Survey	23
Parrot's Ascent of Mount Ararat	6

History and Criticism.

Adair's (Sir R.) Memoir of his Mission to Vienna	3
" Negotiations for the Peace of the Dardanelles	3
Addison's Hist. of Knights Templars	3
" History of the Temple Church	3
Bell's History of Russia	4
Blair's Chron. and Histor. Tables	4
Bloomfield's Edition of Thucydides	4
" Translation of do.	4
Bunsen's Egypt	5
Cooley's History of Maritime and Inland Discovery	7
Crowe's History of France	7

	Pages
Dahlmann's English Revolution	7
De Sismondi's Fall of Roman Empire	8
" Italian Republics	8
Dunham's Hist. of Spain & Portugal	8
" History of Europe during the Middle Ages	9
" Hist. of the German Emp.	9
" History of Denmark, Sweden, and Norway	9
" History of Poland	9
Dunlop's History of Fiction	9
Eccleston's English Antiquities	9
Fergus's History of United States	9
Grant's (Mrs.) Memoir and Correspondence	10
Grattan's History of Netherlands	10
Grimblot's William III. and Louis XIV.	11
Guicciardini's Historical Maxims	11
Halsted's Life of Richard III.	11
Haydon On Painting and Design	12
Historical Pictures of the Middle Ages	12
Horsley's (Bp.) Biblical Criticism	13
Jeffrey's (Lord) Contributions to The Edinburgh Review	15
Keightley's Outlines of History	15
Laing's Kings of Norway	16
Lempriere's Classical Dictionary	17
Macaulay's Crit. and Hist. Essays	19
Mackinnon's History of Civilisation	19
Mackintosh's Miscellaneous Works	19
" History of England	19
M'Culloch's Historical, Geographical, and Statistical Dictionary	20
Mauder's Treasury of History	21
Mignet's Antonio Perez and Philip II.	21
Milner's Church History	22
Moore's History of Ireland	22
Mosheim's Ecclesiastical History	22
Müller's Mythology	22
Nicolas's Chronology of History	23
Ranke's History of the Reformation	25
Robert's Duke of Monmouth	26
Rome, History of	26
Russell's Correspondence of the Fourth Duke of Bedford	4
Scott's History of Scotland	27
Stebbing's History of the Church	23
" History of Reformation	24
" Church History	24
Switzerland, History of	29
Sydney Smith's Works	28
Thirlwall's History of Greece	30
Tooke's History of Prices	30
Turner's History of England	31
Tytler's Elements of General History	31
Zumpt's Latin Grammar	32

Juvenile Books.

Boy's own Book (The)	5
Conscience's Flemish Sketches	6
Hawes's Tales of the North American Indians	12
Howitt's (Wm.) Boy's Country Book	14
Marcel's Conversations—	
On the History of England	20
On Chemistry	20
On Natural Philosophy	20
On Political Economy	20
On Vegetable Physiology	20
On Land and Water	20
On Language	20
" The Game of Grammar	20
" Willy's Grammar	20
" Lessons on Animals, &c.	20
Marryat's Masterman Ready—	
Mission; or, Scenes in Africa	21
Settlers in Canada	20
Mauder's Universal Class-Book	21
Pycroft's (Rev. J.) English Reading	25

Medicine.

Bull's Hints to Mothers	5
" Management of Children	5
Copland's Dictionary of Medicine	7
Elliotson's Human Physiology	9
Holland's Medical Notes	13
Lefevre's Apology for the Nerves	16
Pereira On Food and Diet	24
Reece's Medical Guide	25
Sandby On Mesmerism	26
Wigan (Dr.) On Duality of the Mind	32

<i>Miscellaneous.</i>	<i>Pages</i>
Adthead's Prisons and Prisoners	3
Bray's Philosophy of Necessity	5
Clavers's Forest Life	6
Collegian's Guide (The)	6
Colton's Lacon	6
De Burton on Pictures	6
De Morgan on Probabilities	8
De Strzelecki's New South Wales	8
Dunlop's History of Fiction	9
Good's Book of Nature	10
Graham's English	10
Grant's Letters from the Mountains	10
Guest's Mabinogion	11
Hand-book of Taste	12
Hobbes (Thos.), Works of	12
Howitt's Rural Life of England	13
" Visits to Remarkable Places	13
" Student-Life of Germany	13
" Rural and Domestic Life	13
" of Germany	13
" Colonisation and Chris-	13
tianity	14
Humphreys' Illuminated Books	14
Illuminated Calendar	14
Jeffrey's (Lord) Contributions to	15
The Edinburgh Review	15
Life of a Travelling Physician	17
Loudon's (Mrs.) Lady's Country	17
Companion	17
Macaulay's Crit. and Hist. Essays	19
Mackintosh's Miscellaneous Works	19
Michelet's The People	21
Müller's Mythology	22
Necker De Saussure's Progressive	23
Education	23
PerryonGermanUniversityEducation	24
Peter Plymley's Letters	24
Pycroft's Course of Eng. Reading	25
Sandby On Mesmerism	26
Sandford's Church, School, & Parish	26
Seaward's Narrative of his Shipwreck	27
Smith's (Rev. Sydney) Works	28
Southey's Common-place Book	28
Taylor's Statesman	30
Walker's Chess Studies	31
Welsford on the English Language	32
Wigan (Dr.) On Duality of the Mind	32
Willoughby's (Lady) Diary	32
Zumpt's Latin Grammar	32

Natural History.

Catlow's Popular Conchology	6
Doubleday's Butterflies and Moths	8
Drummond's Letters to a Naturalist	9
Gray's Molluscous Animals	11
" Mammalia	11
" and Mitchell's Ornithology	11
Kirby and Spence's Entomology	15
Lee's Taxidermy	16
" Elements of Natural History	16
Marcet's Lessons on Animals, &c.	20
Newell's Zoology of the Eng. Poets	23
Stephens's British Coleoptera	29
Swainson On Study of Natural Hist.	29
" Animals	29
" Taxidermy	29
" Quadrupeds	29
" Birds	29
" Animals in Menageries	29
" Fish, Amphibians, and	29
Reptiles	29
" Insects	29
" Malacology	29
" Habits and Instincts of	29
Animals	29
Turton's Shells of the British Islands	31
Waterton's Essays on Natural Hist.	31
Westwood's Classification of Insects	32
Zoology of HMSS. Erebus and Terror	32

Novels and Works of Fiction.

Bray's (Mrs.) Novels	5
Conscience's Flemish Sketches	6
Doctor (The)	8
Dunlop's History of Fiction	9
Marryat's Masterman Ready	20
" Settlers in Canada	20
" Mission; or, Scenes in Africa	21
Pericles, a Tale of Athens	24
Willis's (N. P.) Dashes at Life	32

1 vol. Cyclopedias & Dictionaries.

Blaine's Encyclop. of Rural Sports	4
Brande's Dictionary of Science, &c.	5
Copland's Dictionary of Medicine	7
Cresy's Civil Engineering	7
Gwilt's Encyclop. of Architecture	11
Johnson's Farmer's Encyclopædia	15
Loudon's Encyclopædia—	
Agriculture	18
Rural Architecture	18
Gardening	17
Plants	18
Trees and Shrubs	18
M'Culloch's Geographical Dictionary	20
" Dictionary of Commerce	19
Murray's Encyclop. of Geography	23
Ure's Dictionary of Arts, &c.	31
Webster & Parkes's Dom. Economy	32

Poetry and the Drama.

	<i>Pages</i>
Aikin's (Dr.) British Poets	27
Bowdler's Family Shakespeare	27
Chaloner's Walter Gray	6
" Poetical Remains	6
Collier's Roxburghe Ballads	6
Costello's Persian Rose Garden	7
Dante, Translated by Wright	8
Goldsmith's Poems	10
Gray's Elegy, illuminated	10
Heron's Palestina	12
Horace, by Tate	29
L. E. L.'s Poetical Works	16
Linwood's Anthologia Oxoniensis	17
Macaulay's Lays of Ancient Rome	19
Mackay's English Lakes	19
Montgomery's Poetical Works	22
Moore's Poetical Works	22
" Lalla Rookh	22
" Irish Melodies	22
Moral of Flowers	22
Poet's Pleasance	24
Pope's Works, by Roscoe	25
Reynard the Fox	25
Southey's Poetical Works	28
" British Poets	27
" Oliver Newman, &c.	28
Spirit of the Woods	28
Thomson's Seasons	30
Turner's Richard III.	31
Watts's (A. A.) Lyrics of the Heart	31

Political Economy & Statistics.

Gilbart on Banking	10
M'Culloch's Geographical, Statisti-	
cal, and Historical Dictionary	20
" Dictionary of Commerce	19
" Political Economy	20
" On Funding & Taxation	20
Strong's Greece as a Kingdom	29
Tooke's History of Prices	30
Twiss's Oregon Question Examined	31

Religious and Moral Works.

Amy Herbert	3
Bailey's Essays on Pursuit of Truth	3
Bloomfield's Greek Testament	4
" College and School do.	5
" Greek & English Lexi-	5
con to New Testament	5
Bunsen's Church of the Future	5
Burns's Christian Philosophy	6
" Fragments	6
Callcott's Scripture Herbal	6
Cooper's Sermons	7
Dale's Domestic Liturgy	7
Dibdin's Sunday Library	29
Doddridge's Family Expositor	8
Englishman's Greek Concordance	9
Englishman's Heb. & Chald. Concord.	9
Fitzroy's (Lady) Scrip Conversations	9
Forster's Hist. Geography of Arabia	10
" Life of Bishop Jebb	10
Gertrude	10
Hook's (Dr.) Lectures on Passion Week	13
Horne's Introduction to Scriptures	13
" Abridgment of ditto	13
Horsley's (Bp.) Biblical Criticism	13
" Psalms	13
Jebb's (Bp.) Protestant Kempis	15
" Pastoral Instructions	15
" Correspond. with Knox	15
Keon's History of the Jesuits	15
Knox's (Alexander) Remains	16
Laing's Notes on Ronge's Schism	16
Marriage Gift	20
Michelet's Priests, Women, & Families	21
Milner's Church History	22
Moshcim's Ecclesiastical History	22
Parables (The)	23
Parkes's Domestic Duties	23
Peter Plymley's Letters	24
Pitman's Sermons on the Psalms	24
Riddle's Letters from a Godfather	26
Robinson's Greek & English Lexicon	26
to the New Testament	26
Sandford's Parochialia	26
" Female Improvement	26
" On Woman	26
Sermon on the Mount (The)	27
Smith's (G.) Perilous Times	27
" Religion of Ancient Britain	27
" Female Disciple	28
" (Sydney) Sermons	28
Southey's Life of Wesley	28
Stebbing's Church History	28
Tate's History of St. Paul	29
Taylor's Dora Melder	30
" Margaret; or, the Pearl	29
" Sermons	29
" Lady Mary; or, Not of the	29
World	29
Tomline's Christian Theology	30
Trollope's Introduction to the Bible	30
" Analecta Theologica	30
Turner's Sacred History	31
Wardlaw's Socinian Controversy	31
Weil's Bible, Koran, and Talmud	32
Whitley's Life Everlasting	32

Willberforce's View of Christianity	32
Willoughby's (Lady) Diary	32

Rural Sports.

Blaine's Dictionary of Sports	4
Hansard's Fishing in Wales	12
Hawker's Instructions to Sportsmen	12
Loudon's (Mrs.) Lady's Country	17
Companion	17
Stable Talk and Table Talk	28

The Sciences and Mathematics.

Bakewell's Introduction to Geology	3
Balmain's Lessons on Chemistry	4
Brande's Dictionary of Science,	
Literature, and Art	5
Brewster's Optics	5
Conversations on Mineralogy	7
Cresy's Civil Engineering	7
De la Beche's Geology of Cornwall, &c.	8
Donovan's Chemistry	8
Elliot's Geometry	9
Farey on the Steam Engine	9
Fosbroke On the Arts, Manners, &c.	10
of the Greeks and Romans	10
Greener On the Gun	11
Herschel's Natural Philosophy	12
" Astronomy	12
Holland's Manufactures in Metal	12
Humboldt's Kosmos	13
Hunt's Researches on Light	14
Kane's Elements of Chemistry	15
Kater and Lardner's Mechanics	15
La Place's System of the World	16
Lardner's Cabinet Cyclopædia	16
" Hydrostatics & Pneumatics	16
" and Walker's Electricity	16
" Arithmetic	16
" Geometry	16
" Treatise on Heat	16
Lerebours on Photography	17
Lloyd On Light and Vision	17
Mackenzie's Physiology of Vision	19
Marcet's (Mrs.) Conversations on	
the Sciences, &c.	20
Moseley's Practical Mechanics	22
" Engineering & Architecture	22
Narrien's Geometry	26
" Astronomy and Geodesy	26
Nesbit's Mensuration	23
Owen's Lectures on Comp. Anatomy	23
Parnell On Roads	23
Pearson's Practical Astronomy	24
Peschel's Elements of Physics	24
Phillips's Palæozoic Fossils of	
Cornwall, &c.	24
" Guide to Geology	24
" Treatise on Geology	24
" Introduct. to Mineralogy	24
Poisson's Mechanics	24
Portlock's Report on the Geology	
of Londonderry	25
Powell's Natural Philosophy	25
Quarterly Journal of the Geological	
Society of London	25
Ritchie (Robert) On Railways	26
Roberts's Dictionary of Geology	26
Sandhurst Coll. Mathemat. Course	26
Scott's Arithmetic and Algebra	26
" Trigonometry	26
Thomson's Algebra	30
Wilkinson's Engines of War	32

Travels.

Allan's Mediterranean	3
Beale's Vale of the Towey	4
Cooley's World Surveyed	6
Costello's (Miss) North Wales	7
De Custine's Russia	8
De Strzelecki's New South Wales	8
Erman's Travels through Siberia	6
Harris's Highlands of Æthiopia	12
Howitt's (R.) Australia Felix	14
Laing's Notes of a Traveller	16
" Residence in Norway	16
" Tour in Sweden	16
Life of a Travelling Physician	17
Mackay's English Lakes	19
Montauban's Wanderings in the East	22
Parrot's Ascent of Mount Ararat	6
Paton's (A. A.) Servia	23
" Modern Syrians	23
Pedestrian Reminiscences	23
Seaward's Narrative	27
Strong's Greece as a Kingdom	29
Von Orlich's Travels in India	31

Veterinary Medicine, &c.

Centaur's Two Books on the Horse	13
Field's Veterinary Records	10
Miles On the Horse's Foot	21
Morton's Veterinary Medicine	22
" Toxicological Chart	22
Percivall's Hippopathology	24
" Anatomy of the Horse	24
Spooner On Foot and Leg of Horse	28
Stable Talk and Table Talk	28
Turner On the Foot of the Horse	31
Winter On the Horse in Health	
and Disease	32

CATALOGUE.

ABERCROMBIE'S PRACTICAL GARDENER,

And Improved System of Modern Horticulture, alphabetically arranged. 4th Edition, with Introductory Treatise on Vegetable Physiology, and Plates, by W. Salisbury. 12mo. 6s. bds.

ABERCROMBIE & MAIN.—THE PRACTICAL GARDENER'S

COMPANION; or, Horticultural Calendar: to which is added, the Garden-Seed and Plant Estimate. Edited from a MS. of J. Abercrombie, by J. Main. 8th Edition. 32mo. 3s. 6d. sd.

ACTON (ELIZA.)—MODERN COOKERY,

In all its Branches, reduced to a System of Easy Practice. For the use of Private Families. In a Series of Receipts, all of which have been strictly tested, and are given with the most minute exactness. By ELIZA ACTON. Dedicated to the Young Housekeepers of England. New Edition, greatly improved. Fcp. 8vo. with woodcuts, 7s. 6d. cloth.

ADAIR (SIR ROBERT).—THE NEGOTIATIONS FOR THE

PEACE of the DARDANELLES, in 1808-9: with Dispatches and Official Documents. By the Right Honourable Sir ROBERT ADAIR, G.C.B. Being a Sequel to the Memoir of his Mission to Vienna in 1806. 2 vols. 8vo. 28s. cloth.

ADAIR (SIR ROBERT).—AN HISTORICAL MEMOIR OF A

MISSION to the COURT of VIENNA in 1806. By the Right Honourable Sir ROBERT ADAIR, G.C.B. With a Selection from his Despatches, published by permission of the proper Authorities. 8vo. 18s. cloth.

ADDISON.—THE KNIGHTS TEMPLARS.

By C. G. ADDISON, Esq., of the Inner Temple. 2d Edition, enlarged. Square crown 8vo. with Illustrations, 18s. cloth.

ADDISON.—THE TEMPLE CHURCH IN LONDON:

Its History and Antiquities. By C. G. ADDISON, Esq., of the Inner Temple; Author of "The History of the Knights Templars." Square crown 8vo. with Six Plates, 5s. cloth.

Also,

A FULL AND COMPLETE GUIDE, HISTORICAL AND DESCRIPTIVE, TO THE TEMPLE CHURCH. (From Mr. Addison's "History of the Temple Church.") Square cr. 8vo. 1s. sewed.

ADSHEAD (JOSEPH).—PRISONS AND PRISONERS.

By JOSEPH ADSHEAD. 8vo. with Illustrations, 7s. 6d. cloth.

CONTENTS:—1. The Fallacies of *The Times* on Prison Discipline.

2. Fictions of Dickens on Solitary Confinement.

3. Prison Enormities—City of London and Middlesex Prisons.

4. Model Prison—Separate System.

5. Continental Prison Reform, &c. &c. &c.

AIKIN.—THE LIFE OF JOSEPH ADDISON.

Illustrated by many of his Letters and Private Papers never before published. By LUCY AIKIN. 2 vols. post 8vo. with Portrait from Sir Godfrey Kneller's Picture, 18s. cloth.

ALLAN (J. H.)—A PICTORIAL TOUR IN THE MEDITER-

RANEAN; comprising Malta, Dalmatia, Asia Minor, Grecian Archipelago, Egypt, Nubia, Greece, Sicily, Italy, and Spain. By J. H. ALLAN, Member of the Athenian Archaeological Society, and of the Egyptian Society of Cairo. 2d Edition. Imperial 4to. with upwards of 40 lithographed Drawings, and 70 Wood Engravings, £3. 3s. cloth.

AMY HERBERT.

By a LADY. Edited by the Rev. WILLIAM SEWELL, B.D. of Exeter College, Oxford. 3d Edition, 2 vols. fcp. 8vo. 9s. cloth.

BAILEY.—ESSAYS ON THE PURSUIT OF TRUTH,

And on the Progress of Knowledge. By SAMUEL BAILEY, Author of "Essays on the Formation and Publication of Opinions," "Berkeley's Theory of Vision," &c. 2d Edition, revised and enlarged. 8vo. 9s. 6d. cloth.

BAKEWELL.—AN INTRODUCTION TO GEOLOGY.

Intended to convey Practical Knowledge of the Science, and comprising the most important recent discoveries; with explanations of the facts and phenomena which serve to confirm or invalidate various Geological Theories. By ROBERT BAKEWELL. Fifth Edition, considerably enlarged. 8vo. with numerous Plates and Woodcuts, 21s. cloth.

BALMAIN.—LESSONS ON CHEMISTRY,

For the use of Pupils in Schools, Junior Students in Universities, and Readers who wish to learn the fundamental Principles and leading Facts: with Questions for Examination, Glossaries of Chemical Terms and Chemical Symbols, and an Index. By WILLIAM H. BALMAIN. With numerous Woodcuts, illustrative of the Decompositions. Fcp. 8vo. 6s. cloth.

BAYLDON.—ART OF VALUING RENTS AND TILLAGES,

And the Tenant's Right of Entering and Quitting Farms, explained by several Specimens of Valuations; and Remarks on the Cultivation pursued on Soils in different Situations Adapted to the Use of Landlords, Land-Agents, Appraisers, Farmers, and Tenants. By J. S. BAYLDON. 6th Edition, corrected and revised. By JOHN DONALDSON, Professor of Agriculture in the Royal Agricultural Training School, Hoddesdon, Editor of "The Plough," &c. 8vo. 10s. 6d. cloth.

BEALE (ANNE).—THE VALE OF THE TOWEY;

Or, Sketches in South Wales. By ANNE BEALE. Post 8vo. 10s. 6d. cloth.

"The great merit of Miss Beale's book is its truth, which leaves a strong impression on the reader's mind."

SPECTATOR.

"A pleasing volume of familiar sketches of Welsh scenery, sprinkled with stories, anecdotes, and romances."

LITERARY GAZETTE.

"This elegant and accomplished writer frequently reminds us agreeably of Miss Mitford."—ATLAS.

BEDFORD CORRESPONDENCE. — CORRESPONDENCE OF

JOHN, FOURTH DUKE OF BEDFORD, selected from the Originals at Woburn Abbey: with Introductions by Lord JOHN RUSSELL.

8vo. Vol. 1 (1742-48), 18s. cloth; Vol. 2 (1749-60), 15s. cloth.

** The Third, and concluding volume, with an Introduction by LORD JOHN RUSSELL, is *in the Press*.

BELL.—LIVES OF THE MOST EMINENT ENGLISH POETS.

By ROBERT BELL, Esq. 2 vols. fcp. 8vo. with Vignette Titles, 12s. cloth.

BELL.—THE HISTORY OF RUSSIA,

From the Earliest Period to the Treaty of Tilsit. By ROBERT BELL, Esq. 3 vols. fcp. 8vo. with Vignette Titles, 18s. cloth.

BLACK.—A PRACTICAL TREATISE ON BREWING,

Based on Chemical and Economical Principles: with Formulæ for Public Brewers, and Instructions for Private Families. By WILLIAM BLACK. Third Edition, revised and corrected, with considerable Additions. The Additions revised by Professor Graham, of the London University. 8vo. 10s. 6d. cloth.

By the same Author,

REMARKS ON BAVARIAN BEER, London Porter, the Influence of Electricity on Fermentation. By WILLIAM BLACK. Being a Supplement to the 3d Edition of his "Treatise on Brewing." 8vo. 2s. 6d. sewed.

BLAINE.—AN ENCYCLOPÆDIA OF RURAL SPORTS;

Or, a complete Account, Historical, Practical, and Descriptive, of Hunting, Shooting, Fishing, Racing, and other Field Sports and Athletic Amusements of the present day. By DELABERE P. BLAINE, Esq. Author of "Outlines of the Veterinary Art," "Canine Pathology," &c. &c. Illustrated by nearly 600 Engravings on Wood, by R. Branston, from Drawings by Alken, T. Landseer, Dickes, &c. 1 thick vol. 8vo. £2. 10s. cloth.

BLAIR'S CHRONOLOGICAL AND HISTORICAL TABLES,

From the Creation to the present time: with Additions and Corrections from the most authentic Writers; including the Computation of St. Paul, as connecting the Period from the Exode to the Temple. Under the revision of Sir HENRY ELLIS, K.H., Principal Librarian of the British Museum. Imperial 8vo. 31s. 6d. half-bound in morocco.

BLOOMFIELD.—HISTORY OF THE PELOPONNESIAN WAR.

By THUCYDIDES. A New Recension of the Text, with a carefully amended Punctuation; and copious NOTES, Critical, Philological, and Explanatory, almost entirely original, but partly selected and arranged from the best Expositors: accompanied with full Indexes, both of Greek Words and Phrases explained, and matters discussed in the Notes. Illustrated by Maps and Plans, mostly taken from actual surveys. By the Rev. S. T. BLOOMFIELD, D.D. F.S.A. 2 vols. 8vo. 38s. cloth.

BLOOMFIELD.—HISTORY OF THE PELOPONNESIAN WAR.

By THUCYDIDES. Newly translated into English, and accompanied with very copious Notes, Philological and Explanatory, Historical and Geographical. By the Rev. S. T. BLOOMFIELD, D.D. F.S.A. 3 vols. 8vo. with Maps and Plates, £2. 5s. boards.

BLOOMFIELD.—THE GREEK TESTAMENT:

With copious English Notes, Critical, Philological, and Explanatory. By the Rev. S. T. BLOOMFIELD, D.D. F.S.A. 6th Edition, improved. 2 vols. 8vo. with a Map of Palestine, £2, cloth.

BLOOMFIELD.—COLLEGE & SCHOOL GREEK TESTAMENT ;

With English Notes. By the Rev. S. T. BLOOMFIELD, D.D. 4th Edition, greatly enlarged, and very considerably improved, 12mo. 10s. 6d. cloth.

BLOOMFIELD.—GREEK AND ENGLISH LEXICON TO THE

NEW TESTAMENT: especially adapted to the use of Colleges, and the Higher Classes in Public Schools; but also intended as a convenient Manual for Biblical Students in general. By Dr. BLOOMFIELD. 2d Edition, greatly enlarged, and very considerably improved. 12mo. on wider paper, 10s. 6d. cloth.

BOY'S OWN BOOK (THE):

A Complete Encyclopædia of all the Diversions, Athletic, Scientific, and Recreative, of Boyhood and Youth. 20th Edition, square 12mo. with many Engravings on Wood, 6s. boards.

BRANDE.—A DICTIONARY OF SCIENCE, LITERATURE,

AND ART; comprising the History, Description, and Scientific Principles of every Branch of Human Knowledge; with the Derivation and Definition of all the Terms in General Use. Edited by W. T. BRANDE, F.R.S.L. & E.; assisted by JOSEPH CAUVIN, Esq. The various departments are by Gentlemen of eminence in each. 1 very thick vol. 8vo. with Wood Engravings, £3, cloth.

BRAY'S (MRS.) NOVELS AND ROMANCES,

Revised and corrected by Mrs. BRAY. In 10 vols. fcp. 8vo. uniformly with "The Standard Novels," with Frontispieces and Vignettes from Designs and Sketches by the late Thomas Stothard, R.A.; C. A. Stothard, F.S.A.; Henry Warren, Esq.; &c. £3, cloth.

** Each volume contains a complete work, and may be had separately, price 6s. as follows:—

- | | |
|--|---|
| 1. The White Hoods (with Portrait of the Author, and General Preface). | 5. The Talba; or, the Moor of Portugal. |
| 2. De Foix. | 6. Warleigh; or, the Fatal Oak. |
| 3. The Protestant. | 7. Trelawny of Trelawne. |
| 4. Fitz of Fitz-Ford. | 8. Trials of the Heart. |
| | 9. Henry de Pomeroy. |
| | 10. Courtenay of Walreddon. |

"To describe in detail Mrs. Bray's works, or criticise minutely their merits, would be superfluous. So many literary notices have appeared in testimony of their value, and these the public have so fully corroborated by their patronage, that little remains but to concur with previous praises of this favourite authoress's talents, acquirements, and genius."—TIMES.

BRAY.—THE PHILOSOPHY OF NECESSITY ;

Or, the Law of Consequences as applicable to Mental, Moral, and Social Science. By CHARLES BRAY. 2 vols. 8vo. 15s. cloth.

BREWSTER.—TREATISE ON OPICS.

By Sir DAVID BREWSTER, LL.D. F.R.S., &c. New Edition. Fcp. 8vo. with Vignette Title, and 176 Woodcuts, 6s. cloth.

BUDGE (J.)—THE PRACTICAL MINER'S GUIDE;

Comprising a Set of Trigonometrical Tables adapted to all the purposes of Oblique or Diagonal, Vertical, Horizontal, and Traverse Dialling; with their application to the Dial, Exercise of Drifts, Lodes, Slides, Levelling, Inaccessible Distances, Heights, &c. By J. BUDGE. New Edition, considerably enlarged. 8vo. with Portrait of the Author, 12s. cloth.

BULL.—THE MATERNAL MANAGEMENT OF CHILDREN,

in HEALTH and DISEASE. By T. BULL, M.D. Member of the Royal College of Physicians, Physician-Accoucheur to the Finsbury Midwifery Institution, Author of "Hints to Mothers for the Management of their Health during Pregnancy and in the Lying In Room." 2d Edition, revised and enlarged. Fcp. 8vo. 7s. cloth.

BULL.—HINTS TO MOTHERS,

For the Management of Health during the Period of Pregnancy and in the Lying-in Room; with an Exposure of Popular Errors in connection with those subjects. By THOMAS BULL, M.D. Physician Accoucheur to the Finsbury Midwifery Institution, &c. &c. 4th Edition, revised and considerably enlarged. Fcp. 8vo. 7s. cloth.

BUNSEN.—AN INQUIRY INTO THE HISTORY, ARTS AND

SCIENCES, LANGUAGE, WRITING, MYTHOLOGY, and CHRONOLOGY of ANCIENT EGYPT: with the peculiar position of that Nation in reference to the Universal History of Mankind. By the Chevalier C. C. J. BUNSEN. Translated from the German, under the Author's superintendence, by C. H. COTTRELL, Esq.; with additional matter, furnished by the Author. 2 vols. 8vo. with numerous Plates. [Preparing for publication.]

BUNSEN (C. C. J.)—THE CHURCH OF THE FUTURE;

Or, an Inquiry into its Prospects, Constitution, and Import, with especial reference to the Church of Prussia. To which is appended, a Correspondence with the Right Hon. William Gladstone. By the Chevalier C. C. J. BUNSEN. Translated, under the superintendence of the Chevalier Bunsen, by the Rev. LEOPOLD J. BERNAYS, Fellow of St. John's College, Oxford. Post 8vo. [In the press.]

BURNS.—THE PRINCIPLES OF CHRISTIAN PHILOSOPHY;

containing the Doctrines, Duties, Admonitions, and Consolations of the Christian Religion. By JOHN BURNS, M.D. F.R.S. 5th Edition. 12mo. 7s. boards.

BURNS.—CHRISTIAN FRAGMENTS;

Or, Remarks on the Nature, Precepts, and Comforts of Religion. By JOHN BURNS, M.D. F.R.S. Professor of Surgery in the University of Glasgow. Author of "The Principles of Christian Philosophy." Fcp. 8vo. 5s. cloth.

BUTLER.—SKETCH OF ANCIENT & MODERN GEOGRAPHY.

By SAMUEL BUTLER, D.D. late Lord Bishop of Lichfield and Coventry; and formerly Head Master of Shrewsbury School. New Edition, revised by his SON. 8vo. 9s. boards.

BUTLER.—ATLAS OF MODERN GEOGRAPHY.

By the late Dr. BUTLER. New Edition; consisting of Twenty-three coloured Maps, from a New Set of Plates; with an Index of all the Names of Places, referring to the Latitudes and Longitudes. 8vo. 12s. half-bound.

BUTLER.—ATLAS OF ANCIENT GEOGRAPHY.

By the late Dr. BUTLER. Consisting of Twenty-three coloured Maps; with an Index of all the Names of Places, referring to the Latitudes and Longitudes. New Edition. 8vo. 12s. hbd.

* * The above two Atlases may be had, half-bound, in One Volume, 4to. price 24s.

CALLCOTT.—A SCRIPTURE HERBAL.

With upwards of 120 Wood Engravings. By LADY CALLCOTT. Square crown 8vo. 25s. cloth.

CATLOW.—POPULAR CONCHOLOGY;

Or, the Shell Cabinet arranged: being an Introduction to the Modern System of Conchology: with a sketch of the Natural History of the Animals, an account of the Formation of the Shells, and a complete Descriptive List of the Families and Genera. By AGNES CATLOW. Fcp. 8vo. with 312 Woodcuts, 10s. 6d. cloth.

CHALENOR.—POETICAL REMAINS OF MARY CHALENOR.

Fcp. 8vo. 4s. cloth.

CHALENOR.—WALTER GRAY,

A Ballad, and other Poems. 2d Edition, including the Poetical Remains of Mary Chalenor. Fcp. 8vo. 6s. cloth.

CLAVERS.—FOREST LIFE.

By MARY CLAVERS, an Actual Settler; Author of "A New Home, Who 'll Follow?" 2 vols. fcp. 8vo. 12s. cloth.

COLLEGIAN'S GUIDE (THE);

Or, Recollections of College Days, setting forth the Advantages and Temptations of a University Education. By *****, M.A. — College, Oxford. Post 8vo. 10s. 6d. cloth.

COLLIER (J. PAYNE).—A BOOK OF ROXBURGHE BALLADS.

Edited by JOHN PAYNE COLLIER, Esq. Post 4to.

[In the press.]

COLTON.—LACON; OR, MANY THINGS IN FEW WORDS.

By the Rev. C. C. COLTON. New Edition. 8vo. 12s. cloth.

CONSCIENCE (HENDRIK).—SKETCHES FROM FLEMISH

LIFE. In Three Tales. Translated from the Flemish of Hendrik Conscience. Square 8vo. with 130 Engravings on Wood, from designs by Flemish artists, 6s. cloth.

"A delightful volume of tales, written in the best vein of Mary Howitt. Though meant chiefly for the young, they can, like all really good juvenile stories, be read with unmixed enjoyment by the mature. Of conceptions, humorous and pleasantly varied, the whole volume is made up."—BRITANNIA.

"There is something about this pretty volume which is individual and instructive. The second tale—'The Progress of a Painter'—as simple a narration of an artist's infancy and youth as was ever told—gives the reader a glimpse into the world of Flemish art; and the illustrations of this volume do no discredit to a school of which ere long more will be heard and seen in England."—ATHENÆUM.

COOLEY.—THE WORLD SURVEYED IN THE NINETEENTH

CENTURY; or, Recent Narratives of Scientific and Exploring Expeditions (chiefly undertaken by command of Foreign Governments). Collected, translated, and, where necessary, abridged, by W. D. COOLEY, Esq. Author of the "History of Maritime and Inland Discovery" in the Cabinet Cyclopædia, &c.

The First Volume of the Series contains—

THE ASCENT of MOUNT ARARAT. By Dr. FRIEDRICH PARROT, Professor of Natural Philosophy in the University of Dorpat, Russian Imperial Councillor of State, &c. 8vo. with a Map by Arrowsmith, and Woodcuts, 14s. cloth.

* * Each volume will form, for the most part, a Work complete in itself, and the whole Series will present an accurate and luminous Picture of all the known portions of the Earth.

The Second Work of the Series will be

ERMANN'S TRAVELS through SIBERIA. 8vo.

[In the press.]

**COOLEY.—THE HISTORY OF MARITIME AND INLAND
DISCOVERY.** By W. D. COOLEY, Esq. 3 vols. fcp. 8vo. with Vignette Titles, 18s. cloth.

CONVERSATIONS ON BOTANY.

9th Edition, improved. Fcp. 8vo. 22 Plates, 7s. 6d. cloth; with the plates coloured, 12s. cloth.

CONVERSATIONS ON MINERALOGY.

With Plates, engraved by Mr. and Mrs. Lowry, from Original Drawings. 3d Edition, enlarged. 2 vols. 12mo. 14s. cloth.

COOPER (REV. E.)—SERMONS,

Chiefly designed to elucidate some of the leading Doctrines of the Gospel. To which is added, an Appendix, containing Sermons preached on several Public Occasions, and printed by desire. By the Rev. Edward Cooper, Rector of Hamstall-Ridware, and of Yoxall, in the County of Stafford; and late Fellow of All-Souls' College, Oxford. 7th Edition. 2 vols. 12mo. 10s. boards.

COOPER (REV. E.)—PRACTICAL AND FAMILIAR SERMONS,

Designed for Parochial and Domestic Instruction. New Edition. 7 vols. 12mo. £1. 8s. boards.

** Vols. 1 to 4, 5s. each; Vols. 5 to 7, 6s. each.

COPLAND.—A DICTIONARY OF PRACTICAL MEDICINE;

comprising General Pathology, the Nature and Treatment of Diseases, Morbid Structures, and the Disorders especially incidental to Climates, to Sex, and to the different Epochs of Life, with numerous approved Formulæ of the Medicines recommended. By JAMES COPLAND, M.D., Consulting Physician to Queen Charlotte's Lying-in Hospital; Senior Physician to the Royal Infirmary for Children; Member of the Royal College of Physicians, London; of the Medical and Chirurgical Societies of London and Berlin, &c. Vols. 1 and 2, 8vo. £3, cloth; and Part 10, 4s. 6d. sewed.

** To be completed in One more Volume.

COSTELLO (MISS.)—THE ROSE GARDEN OF PERSIA.

A Series of Translations from the Persian Poets. By Miss LOUISA STUART COSTELLO, Author of "Specimens of the Early Poetry of France," "A Summer amongst the Bocages and the Vines," &c. &c. Long 8vo. with Illuminated Pages and Borders printed in Rose-Colour, 18s. boards; or 31s. 6d. bound in rose-coloured morocco (*Persian style*) by Hayday.

"In looking through this superb volume we find much that is beautiful in the poetry; and are disposed to esteem it a selection well suited to convey an accurate impression of the beauties of the Persian poets. The ornaments are all of the most gorgeous kind of Eastern illumination—strictly in the taste for which the oriental writers have long been so justly celebrated in the decoration of their books and manuscripts."—ART-UNION.

COSTELLO (MISS.)—FALLS, LAKES, AND MOUNTAINS OF

NORTH WALES; being a Pictorial Tour through the most interesting parts of the Country. By LOUISA STUART COSTELLO, Author of "A Summer among the Bocages and Vines," "A Pilgrimage to Auvergne," "Bearn and the Pyrenees," &c. Profusely illustrated with Views, from Original Sketches by D. H. M'Kewan, engraved on wood, and lithographed, by T. and E. Gilks. Square 8vo. with Map, 14s. cloth.

CRESY (E.)—AN ENCYCLOPÆDIA OF CIVIL ENGINEERING,

Historical, Theoretical, and Practical. By EDWARD CRESY, F.S.A. C.E. Illustrated by many Hundred Engravings on Wood, explanatory of the Principles, Machinery, and Constructions which come under the Direction of the Civil Engineer. In 1 large volume, 8vo. uniform with Messrs. Longman and Co.'s Series of One-Volume Encyclopædias and Dictionaries. [In the press.]

CROCKER'S ELEMENTS OF LAND SURVEYING.

Fifth Edition, corrected throughout, and considerably improved and modernized, by T. G. BUNT, Land Surveyor, Bristol. To which are added, TABLES OF SIX-FIGURE LOGARITHMS, &c., superintended by RICHARD FARLEY, of the Nautical Almanac Establishment. Post 8vo. 12s. cloth.

CROWE.—THE HISTORY OF FRANCE,

From the Earliest Period to the Abdication of Napoleon. By E. E. CROWE, Esq. 3 vols. fcp. 8vo. with Vignette Titles, 18s. cloth.

DAHLMANN.—HISTORY OF THE ENGLISH REVOLUTION.

By F. C. DAHLMANN, late Professor of History at the University of Göttingen. Translated from the German, by H. EVANS LLOYD. 8vo. 10s. 6d. cloth.

DALE (THE REV. T.)—THE DOMESTIC LITURGY AND

FAMILY CHAPLAIN, in two Parts: the first Part being Church Services adapted for domestic use, with Prayers for every day of the week, selected exclusively from the Book of Common Prayer; Part 2 comprising an appropriate Sermon for every Sunday in the year. By the Rev. THOMAS DALE, M.A. Canon-Residentiary of St. Paul's, and Vicar of St. Bride's, London. Post 4to. 21s. cloth; 31s. 6d. calf lettered; or £2. 10s. handsomely bound in morocco, with gilded edges, by Hayday.

DANTE, TRANSLATED BY WRIGHT.—DANTE.

Translated by **ICHABOD CHARLES WRIGHT**, M.A. late Fellow of Magdalen College, Oxford. A New Edition, revised and corrected. 3 vols. fcp. 8vo. with Portrait, 7s. 6d. sewed.

* * Vol. I. contains the Inferno; Vol. II. the Purgatorio; Vol. III. the Paradiso.

DAVY (SIR HUMPHRY).—ELEMENTS OF AGRICULTURAL

CHEMISTRY, in a Course of Lectures. By **SIR HUMPHRY DAVY**. With Notes by **Dr. JOHN DAVY**. 6th Edition. 8vo. with 10 Plates, 15s. cloth.

DE BURTIN.—A TREATISE ON THE KNOWLEDGE NECES-

SARY to AMATEURS of PICTURES. Translated and Abridged from the French of **M. FRANCIS XAVIER DE BURTIN**, First Stipendiary Member of the Royal Academy of Brussels in the Class of Sciences, &c. By **ROBERT WHITE**, Esq. 8vo. with four Lithographic Engravings, 12s. cloth.

DE CUSTINE.—RUSSIA.

By the **MARQUIS DE CUSTINE**. Translated from the French. 2d Edition. 3 vols. post 8vo. 31s. 6d. cloth.

DE LA BECHE.—REPORT ON THE GEOLOGY OF CORN-

WALL, DEVON, and WEST SOMERSET. By **HENRY T. DE LA BECHE**, F.R.S. &c., Director of the Ordnance Geological Survey. Published by Order of the Lords Commissioners of H.M. Treasury. 8vo. with Maps, Woodcuts, and 12 large Plates, 14s. cloth.

DE MORGAN.—AN ESSAY ON PROBABILITIES,

And on their Application to Life Contingencies and Insurance Offices. By **AUG. DE MORGAN**, of Trinity College, Cambridge. Fcp. 8vo. with Vignette Title, 6s. cloth.

DE STRZELECKI (P. E.)—THE PHYSICAL DESCRIPTION

of **NEW SOUTH WALES** and **VAN DIEMAN'S LAND**; accompanied by a Geological Map Sections, and Diagrams, and Figures of the Organic Remains. By **P. E. DE STRZELECKI**. 8vo. with coloured Map and numerous Plates, 24s. cloth.

DE SISMONDI.—THE HISTORY OF THE ITALIAN REPUB-

LICS; or, of the Origin, Progress, and Fall of Freedom in Italy, from A.D. 476 to 1806. By **J. C. L. SISMONDI**. Fcp. 8vo. with Vignette Title, 6s. cloth.

DE SISMONDI.—THE HISTORY OF THE FALL OF THE

ROMAN EMPIRE. Comprising a View of the Invasion and Settlement of the Barbarians. By **J. C. L. DE SISMONDI**. 2 vols. fcp. 8vo. with Vignette Titles, 12s. cloth.

DOCTOR (THE), &c.

5 vols. post 8vo. £2. 12s. 6d. cloth.

"Admirably as the mystery of the 'Doctor' has been preserved up to the present moment, there is no longer any reason for affecting secrecy on the subject. The author is Robert Southey: he acknowledged the fact shortly before his last illness to his most confidential friend, an M.P. of high character. In a private letter from Mrs. Southey, dated February 27, 1843, she not only states the fact, but adds that the greater part of a sixth volume had gone through the press, and that Southey looked forward to the pleasure of drawing her into it as a contributor; giving her full authority to affirm that her husband is the author."—**ROBERT BELL**, Esq. in **THE STORY TELLER**.

DODDRIDGE.—THE FAMILY EXPOSITOR;

Or, a Paraphrase and Version of the New Testament: with Critical Notes, and a Practical Improvement of each Section. By **P. DODDRIDGE**, D.D. To which is prefixed, a Life of the Author, by **A. KIPPIS**, D.D. F.R.S. and S.A. New Edition, 4 vols. 8vo. £1. 16s. cloth.

DONOVAN.—TREATISE ON CHEMISTRY.

By **M. DONOVAN**, M.R.I.A. Fourth Edition. Fcp. 8vo. with Vignette Title, 6s. cloth.

DONOVAN.—A TREATISE ON DOMESTIC ECONOMY.

By **M. DONOVAN**, Esq. M.R.I.A. Professor of Chemistry to the Company of Apothecaries in Ireland. 2 vols. fcp. 8vo. with Vignette Titles, 12s. cloth.

DOUBLEDAY'S BUTTERFLIES.—THE GENERA OF DIUR-

NAL LEPIDOPTERA; comprising their Generic Characters—a Notice of the Habits and Transformations—and a Catalogue of the Species of each Genus. By **EDWARD DOUBLEDAY**, Esq. F.L.S. &c., Assistant in the Zoological Department of the British Museum. Imperial 4to. uniform with Gray and Mitchell's Ornithology; Illustrated with 75 Coloured Plates.

* * To be published in Monthly Parts, 5s. each; each part to consist of 2 coloured plates, with accompanying Letter-press, giving the Generic Characters, a Short Notice of the Habits, and a Catalogue of the Species of each Genus. Publication will commence when 150 Subscribers' Names have been received.

DOVER.—LIFE OF FREDERICK II. KING OF PRUSSIA.

By **LORD DOVER**. 2d Edition. 2 vols. 8vo. with Portrait, 28s. boards.

DRUMMOND (DR. J. L.)—LETTERS TO A YOUNG NATURALIST, ON THE STUDY OF NATURE AND NATURAL THEOLOGY. By JAMES L. DRUMMOND, M.D. Author of "First Steps to Botany," &c. Second Edition. Post 8vo. with Wood Engravings, 7s. 6d. boards.

DRUMMOND.—FIRST STEPS TO BOTANY,

Intended as popular Illustrations of the Science, leading to its study as a branch of general education. By J. L. DRUMMOND, M.D. 4th Edit. 12mo. with numerous Woodcuts, 9s. bds.

DUNHAM.—THE HISTORY OF THE GERMANIC EMPIRE.

By Dr. DUNHAM. 3 vols. fcp. 8vo. with Vignette Titles, 18s. cloth.

THE HISTORY OF EUROPE DURING THE MIDDLE AGES. By Dr. Dunham. 4 vols. fcp. 8vo. with Vignette Titles, £1. 4s. cloth.

THE HISTORY OF SPAIN AND PORTUGAL. By Dr. Dunham. 5 vols. fcp. 8vo. with Vignette Titles, £1. 10s. cloth.

THE HISTORY OF SWEDEN, DENMARK, AND NORWAY. By Dr. Dunham. 3 vols. fcp. 8vo. with Vignette Titles, 18s. cloth.

THE HISTORY OF POLAND. By Dr. Dunham. Fcp. 8vo. with Vignette Title, 6s. cloth.

THE LIVES OF THE EARLY WRITERS OF GREAT BRITAIN. By Dr. Dunham, R. Bell, Esq. &c. Fcp. 8vo. with Vignette Title, 6s. cloth.

THE LIVES OF BRITISH DRAMATISTS. By Dr. Dunham, R. Bell, Esq. &c. 2 vols. fcp. 8vo. with Vignette Titles, 12s. cloth.

DUNLOP (JOHN).—THE HISTORY OF FICTION:

Being a Critical Account of the most celebrated Prose Works of Fiction, from the earliest Greek Romances to the Novels of the Present Age. By JOHN DUNLOP, Esq. 3d Edition, complete in one volume. Medium 8vo. 15s. cloth.

EASTLAKE (C. L.)—MATERIALS FOR A HISTORY OF OIL PAINTING. By CHARLES LOCK EASTLAKE, R.A. 8vo. [In the press.]

ECCLESTON (JAMES.)—A MANUAL OF ENGLISH ANTIQUITIES. By JAMES ECCLESTON, B.A. Head Master of Sutton Coldfield Grammar School. 8vo. with numerous Illustrations on Wood. [In the press.]

ELLIOT (J.)—A COMPLETE TREATISE ON PRACTICAL GEOMETRY and MENSURATION. With numerous Exercises. By JAMES ELLIOT, formerly Teacher of Mathematics in the Mechanics' Institution of Liverpool. 8vo. 5s. cloth.
** KEY, containing full Demonstrations and Solutions. 8vo. 6s. cloth.

ELLIOTSON.—HUMAN PHYSIOLOGY:

With which is incorporated much of the elementary part of the "Institutiones Physiologicæ" of J. F. Blumenbach, Professor in the University of Göttingen. By JOHN ELLIOTSON, M.D. Cantab. F.R.S. Fifth Edition. 8vo. with numerous Woodcuts, £2. 2s. cloth.

ENGLISHMAN'S GREEK CONCORDANCE OF THE NEW TESTAMENT: being an Attempt at a Verbal Connexion between the Greek and the English Texts; including a Concordance to the Proper Names, with Indexes, Greek-English and English-Greek. 2d Edition, carefully revised, with a new Index, Greek and English. Royal 8vo. £2. 2s. cloth.

ENGLISHMAN'S HEBREW AND CHALDEE CONCORDANCE of the OLD TESTAMENT; being an attempt at a Verbal Connection between the Original and the English Translations: with Indexes, a List of the Proper Names and their occurrences, &c. &c. 2 vols. royal 8vo. £3. 13s. 6d. cloth; large paper, £4. 14s. 6d.

FAREY.—A TREATISE ON THE STEAM ENGINE,

Historical, Practical, and Descriptive. By JOHN FAREY, Engineer. 4to. illustrated by numerous Woodcuts, and 25 Copper-plates, £5. 5s. boards.

FERGUS.—HISTORY OF UNITED STATES OF AMERICA,

From the Discovery of America to the Election of General Jackson to the Presidency. By the Rev. H. FERGUS. 2 vols. fcp. 8vo. with Vignette Titles, 12s. cloth.

FITZROY (LADY).—SCRIPTURAL CONVERSATIONS BETWEEN CHARLES and his MOTHER. By Lady CHARLES FITZROY. Fcp. 8vo. 4s. 6d. cloth

FORSTER.—THE STATESMEN OF THE COMMONWEALTH OF ENGLAND. With an Introductory Treatise on the Popular Progress in English History. By JOHN FORSTER, Esq. 5 vols. fcp. 8vo. with Original Portraits of Pym, Eliot, Hampden, Cromwell, and an Historical Scene after a Picture by Cattermole, £1. 10s. cloth.

The Introductory Treatise, intended as an Introduction to the Study of the Great Civil War in the Seventeenth Century, separately, 2s. 6d. sewed.

The above 5 vols. form Mr. Forster's portion of the Lives of Eminent British Statesmen, by Sir James Mackintosh, the Right Hon. T. P. Courtenay, and John Forster, Esq. 7 vols. fcp. 8vo. with Vignette Titles, £2. 2s. cloth.

FIELD.—POSTHUMOUS EXTRACTS FROM THE VETERINARY RECORDS OF THE LATE JOHN FIELD. Edited by his Brother, WILLIAM FIELD, Veterinary Surgeon, London. 8vo. 8s. boards.

FORSTER (REV. C.)—THE HISTORICAL GEOGRAPHY OF ARABIA; or, the Patriarchal Evidences of Revealed Religion. A Memoir, with illustrative Maps and an Appendix, containing Translations, with an Alphabet and Glossary of the Hamyaritic Inscriptions recently discovered in Hadramaut. By the Rev. CHARLES FORSTER, B.D., one of the Six Preachers in the Cathedral of Christ, Canterbury, and Rector of Stisted, Essex; Author of "Mahometanism Unveiled." 2 vols. 8vo. 30s. cloth.

FORSTER (REV. C.)—THE LIFE OF JOHN JEBB, D.D. F.R.S., late Bishop of Limerick. With a Selection from his Letters. By the Rev. CHARLES FORSTER, B.D. Rector of Stisted, Essex, and one of the Six Preachers in the Cathedral of Christ, Canterbury, formerly Domestic Chaplain to the Bishop. Second Edition, 8vo. with Portrait, &c. 16s. cloth.

FOSBROKE.—A TREATISE ON THE ARTS, MANNERS, MANUFACTURES, and INSTITUTIONS of the GREEKS and ROMANS. By the Rev. T. D. FOSBROKE, &c. 2 vols. fcp. 8vo. with Vignette Titles, 12s. cloth.

GERTRUDE.

A Tale. By the Author of "Amy Herbert." Edited by the Rev. WILLIAM SEWELL, B.D. of Exeter College, Oxford. 2d Edition. 2 vols. fcp. 8vo. 9s. cloth.

GILBART (J. W.) — THE HISTORY AND PRINCIPLES OF BANKING. BY JAMES WILLIAM GILBART, General Manager of the London and Westminster Bank. 3d Edition. 8vo. 9s. boards.

GLEIG.—LIVES OF MOST EMINENT BRITISH MILITARY COMMANDERS. By the Rev. G. R. GLEIG. 3 vols. fcp. 8vo. with Vignette Titles, 18s. cloth.

GLENDINNING.—PRACTICAL HINTS ON THE CULTURE OF THE PINE APPLE. By R. GLENDINNING, Gardener to the Right Hon. Lord Rolle, Bicton. 12mo. with Plan of a Pinery, 5s. cloth.

GOLDSMITH. — THE POETICAL WORKS OF OLIVER GOLDSMITH. Illustrated by Wood Engravings, from the Designs of G. W. Cope, A.R.A., Thomas Creswick, A.R.A., J. C. Horsley, R. Redgrave, A.R.A., and Frederick Tayler Members of the Etching Club. With a Biographical Memoir, and Notes on the Poems. Edited by BOLTON CORNEY, Esq. Square crown 8vo. uniform with "Thomson's Seasons," 21s. cloth; bound in morocco, by Hayday, £1. 16s.

* * * One Hundred Copies, £2. 2s. each, printed on prepared paper of great beauty.

GOOD.—THE BOOK OF NATURE.

A Popular Illustration of the General Laws and Phenomena of Creation. By JOHN MASON GOOD, M.D. F.R.S., &c. Third Edition, corrected. 3 vols. fcp. 8vo. 24s. cloth.

GRAHAM.—ENGLISH; OR, THE ART OF COMPOSITION explained in a Series of Instructions and Examples. By G. F. GRAHAM. Second Edition, revised and improved. Fcp. 8vo. 7s. cloth.

GRANT (MRS.)—LETTERS FROM THE MOUNTAINS.

Being the Correspondence with her Friends, between the years 1773 and 1803. By MRS GRANT, of Laggan. Sixth Edition. Edited, with Notes and Additions, by her son, J. P. GRANT, Esq. 2 vols. post 8vo. 21s. cloth.

GRANT (MRS. OF LAGGAN).—MEMOIR AND CORRESPONDENCE of the late Mrs. Grant, of Laggan, Author of "Letters from the Mountains," "Memoirs of an American Lady," &c. &c. Edited by her Son, J. P. GRANT, Esq. Second Edition. 3 vols. post 8vo. with Portrait, 31s. 6d. cloth.

GRATTAN.—THE HISTORY OF THE NETHERLANDS,

From the Invasion by the Romans to the Belgian Revolution in 1830. By T. C. GRATTAN, Esq. Fcp. 8vo. with Vignette Title, 6s. cloth.

GRAY (JOHN).—GRAY'S ELEGY,

Written in a Country Churchyard. Illuminated in the Missal style. By OWEN JONES, Architect. Imp. 8vo. 31s. 6d. elegantly bound in patent relieve leather.

GRAY.—FIGURES OF MOLLUSCOUS ANIMALS,

Selected from various Authors. Etched for the Use of Students. By MARIA EMMA GRAY. Vol. I. 8vo. with 78 plates of Figures, 12s. cloth.

GRAY (J. E.)—THE GENERA OF MAMMALIA ;

comprising their Generic Characters—a Notice of the Habits of each Genus—and a Short Character of each of the well-established species, referred to the several genera. By JOHN EDWARD GRAY, Esq. Keeper of the Zoological Collection of the British Museum. Imp. 4to. uniform with Gray and Mitchell's Ornithology ; Illustrated with 175 Plates.

. To be published in Monthly Parts, 12s. each ; each part to consist of 4 coloured and 3 plain Plates, with accompanying Letter-press. The work will not exceed 25 Parts. Publication will commence when 150 Subscriber's Names have been received.

GRAY AND MITCHELL'S ORNITHOLOGY.—THE GENERA

Of BIRDS ; comprising their Generic Characters, a Notice of the Habits of each Genus, and an extensive List of Species, referred to their several Genera. By GEORGE ROBERT GRAY, Acad. Imp. Georg. Florent. Soc. Corresp. Senior Assistant of the Zoological Department, British Museum ; and Author of the "List of the Genera of Birds," &c. &c. Illustrated with Three Hundred and Fifty imperial quarto Plates, by DAVID WILLIAM MITCHELL.

In course of publication, in Monthly Parts, 10s. 6d. each ; each Part consisting generally of Four imperial quarto coloured Plates and Three plain, and accompanying Letterpress ; giving the Generic Characters, short Remarks on the Habits, and a List of Species of each Genus as complete as possible. The uncoloured Plates contain the Characters of all the Genera of the various Sub-families, consisting of numerous details of Heads, Wings, and Feet, as the case may require, for pointing out their distinguishing Characters.

. The work will not exceed Fifty Monthly Parts. [No. 24 was published March 31st.]

GREENER.—THE GUN ;

Or, a Treatise on the various Descriptions of Small Fire-Arms. By W. GREENER, Inventor of an improved method of Firing Cannon by Percussion, &c. 8vo. with Illustrations, 15s. boards.

GREENWOOD (COL.)—THE TREE-LIFTER ;

Or, a New Method of Transplanting Trees. By Col. GEO. GREENWOOD. 8vo. with an Illustrative Plate, 7s. cloth.

GRIMBLot (P.)—LETTERS OF WILLIAM III. AND LOUIS

XIV. and of their Ministers. Illustrating the Domestic and Foreign Policy of England during the period which followed the Revolution of 1688. Extracted from the Archives of France and England, and from Foreign papers. Edited by P. GRIMBLot. 8vo. [In the press.]

GRUNER (L.) — THE DECORATIONS OF THE GARDEN

PAVILION IN THE GROUNDS OF BUCKINGHAM PALACE. Fifteen Plates, by L. GRUNER. With Descriptions by Mrs. JAMESON. Published by Command of Her Majesty. Small folio, 31s. 6d. plain ; coloured, £5 5s. cloth.

GUEST.—THE MABINOGION,

From the Llyfr Coch o Hergest, or Red Book of Hergest, and other ancient Welsh MSS. ; with an English Translation and Notes. By Lady CHARLOTTE GUEST. Parts 1 to 6. Royal 8vo. 8s. each, sewed.

GUICCIARDINI (F.)—THE MAXIMS OF FRANCIS GUIC-

CIARDINI. Translated by EMMA MARTIN. With Notes, and Parallel Passages from the works of Machiavelli, Lord Bacon, Pascal, Rochefoucault, Montesquieu, Burke, Talleyrand, M. Guizot, &c. ; and a Sketch of the Life of Guicciardini. Square fcp. 8vo. with Portrait, 7s. boards ; or bound in morocco by Hayday, 14s.

"Miss Martin deserves much credit for the production of this remarkably elegant little volume. Her translation is executed with extreme care ; her memoir of Guicciardini is well-written and amply informing ; her parallel passages are chosen with singular taste, and display great knowledge of the writings of distinguished political philosophers."

BRITANNIA.

GWILT.—AN ENCYCLOPÆDIA OF ARCHITECTURE ;

Historical, Theoretical, and Practical. By JOSEPH GWILT, Esq. F.S.A. Illustrated with upwards of 1000 Engravings on Wood, from Designs by J. S. GWILT. 1 thick vol. 8vo. containing nearly 1300 closely-printed pages, £2. 12s. 6d. cloth.

HALL.—NEW GENERAL LARGE LIBRARY ATLAS OF

FIFTY-THREE MAPS, on Colombier Paper ; with the Divisions and Boundaries carefully coloured. Constructed entirely from New Drawings, and engraved by SIDNEY HALL. New Edition, thoroughly revised and corrected ; including all the Alterations rendered necessary by the recent Official Surveys, the New Roads on the Continent, and a careful Comparison with the authenticated Discoveries published in the latest Voyages and Travels. Folded in half, Nine Guineas, half-bound in russia ; full size of the Maps, Ten Pounds, half-bd. russia.

HALSTED.—LIFE AND TIMES OF RICHARD THE THIRD,

as Duke of Gloucester and King of England : in which all the Charges against him are carefully investigated and compared with the Statements of the Cotemporary Authorities. By CAROLINE A. HALSTED, Author of "The Life of Margaret Beaufort, Mother of King Henry VII." and "Obligations of Literature to the Mothers of England." 2 vols. 8vo. with a Portrait from an Original Picture in the possession of the Right Hon. Lord Stafford, never before engraved, and other illustrations, £1. 10s. cloth.

HANNAM.—THE ECONOMY OF WASTE MANURES:

a Treatise on the Nature and Use of Neglected Fertilizers. By JOHN HANNAM. Written for the Yorkshire Agricultural Society, and published by permission of the Council. A New Edit. Fcp. 8vo. *[In the press.]*

HAND-BOOK OF TASTE;

Or, How to Observe Works of Art, especially Cartoons, Pictures, and Statues. By FABIUS PICTOR. 3d Edition. Fcp. 8vo. 3s. boards.

HANSARD.—TROUT AND SALMON FISHING IN WALES.

By G. A. HANSARD. 12mo. 6s. 6d. cloth.

HARRIS.—THE HIGHLANDS OF ÆTHIOPIA;

Being the Account of Eighteen Months' Residence of a British Embassy to the Christian Court of Shoa. By Major Sir W. C. HARRIS, Author of "Wild Sports in Southern Africa," &c. 2d Edition. 3 vols. 8vo. with Map and Illustrations, £2. 2s. cloth.

HAWES.—TALES OF THE NORTH AMERICAN INDIANS,

And Adventures of the Early Settlers in America; from the landing of the Pilgrim Fathers, in 1620, to the Time of the Declaration of Independence. By BARBARA HAWES. Fcp. 8vo. with Frontispiece, 6s. cloth.

HAWKER.—INSTRUCTIONS TO YOUNG SPORTSMEN

In all that relates to Guns and Shooting. By Lieut.-Col. P. HAWKER. 9th Edit. corrected, enlarged, and improved, with Eighty-five Plates and Woodcuts by Adlard and Branston, from Drawings by C. Varley, Dickes, &c. 8vo. £1. 1s. cloth.

HAYDON.—LECTURES ON PAINTING AND DESIGN:

Delivered at the London Institution, the Royal Institution, Albemarle Street, to the University of Oxford, &c. By B. R. HAYDON, Historical Painter. With Designs drawn on Wood by the Author, and engraved by Edward Evans. 8vo. 12s. cloth.

. A Second Volume of this work is in preparation.

HENSLOW.—THE PRINCIPLES OF DESCRIPTIVE AND

PHYSIOLOGICAL BOTANY. By J. S. HENSLOW, M.A. F.L.S. &c. Fcp. 8vo. with Vignette Title, and nearly 70 Woodcuts, 6s. cloth.

HERON (R. M.)—PALESTRINA:

A Metrical Romance. By ROBERT M. HERON, Esq. 8vo. 8s. 6d.

HERSCHEL.—A TREATISE ON ASTRONOMY.

By Sir JOHN HERSCHEL. New Edition. Fcp. 8vo. Vignette Title, 6s. cloth.

HERSCHEL.—A PRELIMINARY DISCOURSE ON THE

STUDY OF NATURAL PHILOSOPHY. By Sir JOHN HERSCHEL. New Edition. Fcp. 8vo. with vignette title, 6s. cloth.

HINTS ON ETIQUETTE AND THE USAGES OF SOCIETY:

With a Glance at Bad Habits. By Ἀγῶγός. "Manners make the man." 24th Edition, revised (with additions) by a Lady of Rank. Fcp. 8vo. 2s. 6d. cloth, gilt edges.

General Observations; Introductions—Letters of Introduction—Marriage—Dinners—Smoking; Snuff—Fashion—Dress—Music—Dancing—Conversation—Advice to Tradespeople—Visiting; Visiting Cards—Cards—Tattling—Of General Society.

HISTORICAL PICTURES OF THE MIDDLE AGES,

In Black and White. Made on the spot, from Records in the Archives of Switzerland. By a WANDERING ARTIST. 2 vols. post 8vo. *[In the press.]*

CONTENTS:—The Nuns' War—The War of Two Abbots—The Passage of the Great St. Bernard—and Bertha, Queen of Transjurane Burgundy.

HOARE.—A DESCRIPTIVE ACCOUNT OF A NEW METHOD

of PLANTING and MANAGING the ROOTS of GRAPE VINES. By CLEMENT HOARE, Author of "A Treatise on the Cultivation of the Grape Vine on Open Walls." 12mo. 5s. cloth.

HOARE.—A PRACTICAL TREATISE ON THE CULTIVATION

OF THE GRAPE VINE ON OPEN WALLS. By CLEMENT HOARE. 3d Edition. 8vo. 7s. 6d. cloth.

HOBBS.—ENGLISH WORKS OF THOMAS HOBBS,

Of Malmesbury; now first collected by Sir WILLIAM MOLESWORTH, Bart. 16 vols. 8vo. 8s. cloth.

. Separately: the English Works, in 11 vols. £5. 10s.; the Latin Works, in 5 vols. £2. 10s.

HOLLAND.—A TREATISE ON THE MANUFACTURES IN METAL. By J. HOLLAND, Esq. 3 vols. fcp. Vignette Titles, about 300 Woodcuts, 18s. cloth.

HOLLAND.—MEDICAL NOTES AND REFLECTIONS.

By HENRY HOLLAND, M.D. F.R.S. &c. Fellow of the Royal College of Physicians, Physician Extraordinary to the Queen, and Physician in Ordinary to His Royal Highness Prince Albert. 2d Edition. 8vo. 18s. cloth.

HOOK (DR. W. F.)—THE LAST DAYS OF OUR LORD'S MINISTRY: a Course of Lectures on the principal Events of Passion Week. By WALTER FARQUHAR HOOK, D.D. Vicar of Leeds, Prebendary of Lincoln, and Chaplain in Ordinary to the Queen. 4th Edition. Fcp. 8vo. 6s. cloth.

HOOKE. —THE BRITISH FLORA,

In Two Vols. Vol. 1; comprising Phanogamous or Flowering Plants, and the Ferns. By Sir WILLIAM JACKSON HOOKER, K.H. LL.D. F.R.A. and L.S. &c. &c. Fifth Edition, with Additions and Corrections; and 173 Figures illustrative of the Umbelliferous Plants, the Composite Plants, the Grasses, and the Ferns. 8vo. with 12 Plates, 14s. plain; with the plates coloured, 24s. cloth.

Vol. 2, in Two Parts, comprising the Cryptogamia and Fungi, completing the British Flora, and forming Vol. 5, Parts 1 and 2, of Smith's English Flora, 24s. boards.

HOOKE AND TAYLOR.—MUSCOLOGIA BRITANNICA.

Containing the Mosses of Great Britain and Ireland, systematically arranged and described; with Plates, illustrative of the character of the Genera and Species. By Sir W. J. HOOKER and T. TAYLOR, M.D. F.L.S., &c. 2d Edition, 8vo. enlarged, 31s. 6d. plain; £3. 3s. coloured.

HORNE (THE REV. T. H.)—AN INTRODUCTION TO THE CRITICAL STUDY AND KNOWLEDGE of the HOLY SCRIPTURES. By THOMAS HARTWELL HORNE, B.D. of St. John's College, Cambridge; Rector of the united Parishes of St. Edmund the King and Martyr, and St. Nicholas Acons, Lombard Street; Prebendary of St. Paul's. A New Edition, revised and corrected, 5 vols. 8vo. with numerous Maps and Facsimilies of Biblical Manuscripts. [Nearly ready.]

HORNE (THE REV. T. H.)—A COMPENDIOUS INTRODUCTION to the STUDY of the BIBLE. By THOMAS HARTWELL HORNE, B.D. of St. John's College, Cambridge. Being an Analysis of his "Introduction to the Critical Study and Knowledge of the Holy Scriptures." 7th Edition, corrected and enlarged. 12mo. with Maps and other Engravings, 9s. boards.

HORSE (THE); AND HOW TO CHOOSE HIM.

By CENTAUR. Fcp. 8vo.

[In the press.]

HORSE, (THE); AND HOW TO USE HIM.

By CENTAUR. Fcp. 8vo.

[In the press.]

HORSLEY (BISHOP).—BIBLICAL CRITICISM

On the first Fourteen Historical Books of the Old Testament; and on the first Nine Prophetical Books. By SAMUEL HORSLEY, LL.D. F.R.S. F.S.A. Lord Bishop of St. Asaph. 2d Edition, containing Translations by the Author never before published, together with copious Indices. 2 vols. 8vo. £1. 10s. cloth.

By the same Author,

THE BOOK of PSALMS; translated from the Hebrew: with Notes, explanatory and critical Fourth Edition. 8vo. 12s. cloth.

HOWITT.—THE RURAL LIFE OF ENGLAND.

By WILLIAM HOWITT. 3d Edition, corrected and revised. Medium 8vo. with Engravings on wood, by Bewick and Williams, uniform with "Visits to Remarkable Places," 21s. cloth.

Life of the Aristocracy.

Life of the Agricultural Population.

Picturesque and Moral Features of the Country.

Strong Attachment of the English to Country Life.

The Forests of England.

Habits, Amusements, and Condition of the

People; in which are introduced Two New

Chapters, descriptive of the Rural Watering Places, and Education of the Rural Population.

HOWITT.—VISITS TO REMARKABLE PLACES;

Old Halls, Battle-Fields, and Scenes illustrative of Striking Passages in English History and Poetry. By WILLIAM HOWITT. New Edition. Medium 8vo. with 40 Illustrations by S. Williams, 21s. cloth.

SECOND SERIES, chiefly in the Counties of DURHAM and NORTHUMBERLAND, with a Stroll along the BORDER. Medium 8vo. with upwards of 40 highly-finished Woodcuts, from Drawings made on the spot for this work, by Messrs. Carnichael, Richardsons, and Weld Taylor, 21s. cloth.

HOWITT.—THE RURAL AND SOCIAL LIFE OF GERMANY:

With Characteristic Sketches of its Chief Cities and Scenery. Collected in a General Tour, and during a Residence in that Country in the Years 1840-42. By WILLIAM HOWITT, Author of "The Rural Life of England," &c. Med. 8vo. with above 50 Illustrations, 21s. cloth.

HOWITT.—THE STUDENT-LIFE OF GERMANY.

From the Unpublished MSS. of Dr. Cornelius. By WILLIAM HOWITT. 8vo. with 24 Wood-Engravings, and Seven Steel Plates, 21s. cloth.

HOWITT.—COLONISATION AND CHRISTIANITY:

A Popular History of the Treatment of the Natives, in all their Colonies, by the Europeans. By WILLIAM HOWITT. Post 8vo. 10s. 6d. cloth.

HOWITT.—THE BOY'S COUNTRY BOOK:

Being the real Life of a Country Boy, written by himself; exhibiting all the Amusements, Pleasures, and Pursuits of Children in the Country. Edited by WILLIAM HOWITT, Author of "The Rural Life of England," &c. 2d Edition. Fcp. 8vo. with 40 Woodcuts, 8s. cloth.

HOWITT (RICHARD).—IMPRESSIONS OF AUSTRALIA

FELIX, during a Four Years' Residences in that Colony: with particular reference to the Prospects of Emigrants. With Notes of a Voyage round the World, Australian Poems, &c. By RICHARD HOWITT. Fcp. 8vo. 7s. cloth.

HUDSON.—PLAIN DIRECTIONS FOR MAKING WILLS

In Conformity with the Law, and particularly with reference to the Act 7 Will. 4 and 1 Vict. c. 26. To which is added, a clear Exposition of the Law relating to the distribution of Personal Estate in the case of Intestacy; with two Forms of Wills, and much useful information, &c. By J. C. HUDSON, Esq. 13th Edition, corrected, with notes of cases judicially decided since the above Act came into operation. Fcp. 8vo. 2s. 6d.

HUDSON.—THE EXECUTOR'S GUIDE.

By J. C. HUDSON, Esq. of the Legacy Duty Office, London; Author of "Plain Directions for Making Wills," and "The Parent's Hand-book." Fourth Edition. Fcp. 8vo. 5s. cloth.

*** These two works may be had in one volume, 7s. cloth.

HUDSON.—THE PARENT'S HAND-BOOK;

Or, Guide to the Choice of Professions, Employments, and Situations; containing useful and practical Information on the subject of placing out Young Men, and of obtaining their Education with a view to particular occupations. By J. C. HUDSON, Esq. Author of "Plain Directions for Making Wills." Fcp. 8vo. 5s. cloth.

HUMBOLDT (BARON).—BARON HUMBOLDT'S KOSMOS;

Or, General Survey of the Physical Phenomena of the Universe. Translated, with the Author's Sanction and Co-operation, under the superintendence of Lieutenant-Colonel EDWARD SABINE, F.R.S. of the Royal Artillery. Post 8vo. *[In the press.]*

*** This translation has been made at the request of Baron Von Humboldt; and the sheets will be seen by him before their publication.

HUMPHREYS.—THE ILLUMINATED BOOKS OF THE

MIDDLE AGES.—A History of Illuminated Books, from the IVth to the XVIIth Century. By HENRY NOEL HUMPHREYS. Illustrated by a Series of Specimens, consisting of an entire Page, of the exact Size of the Original, from the most celebrated and splendid MSS. in the Imperial and Royal Libraries of Vienna, Moscow, Paris, Naples, Copenhagen, and Madrid;—from the Vatican, Escorial, Ambrosian, and other great Libraries of the Continent;—and from the rich Public, Collegiate, and Private Libraries of Great Britain; superbly printed in Gold, Silver, and Colours.

In course of publication in Parts. Parts 1 and 2, each containing Three Plates, with Descriptions, Imperial Quarto (15 in. by 11), splendidly printed, in gold, silver, and colours, in imitation of the originals, as accurate as can be produced by mechanical means, 12s.; LARGE PAPER, on Half Imperial (21½ in. by 15), to prevent folding the large Plates, 21s.

Six Parts to form a Volume, Four Volumes completing the work.

HUNT.—RESEARCHES ON LIGHT:

An Examination of all the Phenomena connected with the Chemical and Molecular Changes produced by the Influence of the Solar Rays; embracing all the known Photographic Processes, and new Discoveries in the Art. By ROBERT HUNT, Keeper of Mining Records, Museum of Economic Geology. 8vo. with Plate and Woodcuts, 10s. 6d. cloth.

ILLUMINATED CALENDAR (THE).—THE ILLUMINATED

CALENDAR and HOME DIARY for 1846; containing 12 pages of *fac-simile* from the Calendar of the rich missal of the Duke of Anjou, styled King of Sicily and Jerusalem; also 24 pages of Diary, each illuminated with an elaborate Border taken from the same MS.; and an Illuminated Title. The binding designed from the framework of one of the miniature pictures of the same MS. Imperial 8vo. 42s. bound in an appropriate ornamental cover.

"In every point of view a tempting volume—superb, and remarkable for its exhibition of the progress of this revived fashion of book-adornment. It is as fanciful, as curious, as brilliant, as its antecessor of last year—the marvellous 'Hours' of Anne of Brittany. The ornaments in gold and the brightest colours; flowers, birds, grotesque figures, saints, apostles, buildings, &c., from the first gay page to the last Christmas slaughter of a black hog or boar, are redolent of the refined art of the illuminators of the close of the XIVth century."—LITERARY GAZETTE.

 The Illuminated Calendar and Home Diary, for 1845; copied from the Manuscript of the "Hours of Anne of Brittany." Imp. 8vo. in emblazoned printing and binding, 42s.

JACKSON.—PICTORIAL FLORA ;

Or, British Botany delineated, in 1500 Lithographic Drawings of all the Species of Flowering Plants indigenous to Great Britain ; illustrating the descriptive works on English Botany of Hooker, Lindley, Smith, &c. By MISS JACKSON. 8vo. 15s. cloth.

JAMES.—LIVES OF MOST EMINENT FOREIGN STATESMEN.

By G. P. R. JAMES, Esq., and E. E. CROWE, Esq. 5 vols. fcp. 8vo. Vignette Titles, 30s. cloth.

JAMES.—A HISTORY OF THE LIFE OF EDWARD THE

BLACK PRINCE, and of various Events connected therewith, which occurred during the Reign of Edward III. King of England. By G. P. R. JAMES, Esq. 2d Edition. 2 vols. fcp. 8vo. Map, 15s. cloth.

JEBB (BISHOP).—PASTORAL INSTRUCTIONS ON THE

CHARACTER and PRINCIPLES of the CHURCH of ENGLAND, selected from his former Publications. By JOHN JEBB, D.D. F.R.S. late Bishop of Limerick, Ardfer, and Aghadoe. A New Edition. Fcp. 8vo. 6s. cloth.

By the same Author,

PIETY WITHOUT ASCETICISM ; or, the Protestant Kempis : a Manual of Christian Faith and Practice, selected from the Writings of Scongal, Charles Howe, and Cudworth ; with Corrections and occasional Notes. 2d Edition. Fcp. 8vo. 7s. cloth.

JEBB (BISHOP) AND KNOX (ALEXANDER). — THIRTY

YEARS' CORRESPONDENCE between John Jebb, D.D. F.R.S. Bishop of Limerick, Ardfer, Aghadoe, and Alexander Knox, Esq. M.R.I.A. Edited by the Rev. CHARLES FORSTER, B.D. Rector of Stisted, Essex, and one of the Six Preachers in the Cathedral of Christ, Canterbury, formerly Domestic Chaplain to Bishop Jebb. 2d Edit. 2 vols. 8vo. 28s. cloth.

JEFFREY. — CONTRIBUTIONS TO THE EDINBURGH

REVIEW. By FRANCIS JEFFREY, now one of the Judges of the Court of Session in Scotland. 4 vols. 8vo. 48s. cloth.

JOHNSON.—THE FARMER'S ENCYCLOPÆDIA,

And Dictionary of Rural Affairs : embracing all the recent Discoveries in Agricultural Chemistry ; adapted to the comprehension of unscientific readers. By CUTHBERT W. JOHNSON, Esq. F.R.S. Barrister-at-Law, Corresponding Member of the Agricultural Society of Königsberg, and of the Maryland Horticultural Society ; Author of several of the Prize Essays of the Royal Agricultural Society of England, and other Agricultural Works ; Editor of the "Farmer's Almanack," &c. 1 thick vol. 8vo. illustrated by Wood Engravings of the best and most improved Agricultural Implements, £2. 10s. cloth.

KANE.—ELEMENTS OF CHEMISTRY ;

Including the most Recent Discoveries and Applications of the Science to Medicine and Pharmacy, and to the Arts. By ROBERT KANE, M.D. M.R.I.A., Professor of Natural Philosophy to the Royal Dublin Society. 8vo. with 236 Woodcuts, 24s. cloth.

KATER AND LARDNER.—A TREATISE ON MECHANICS.

By Captain KATER and Dr. LARDNER. New Edition. Fcp. 8vo. Vignette Title, and 19 Plates, comprising 224 distinct figures, 6s. cloth.

KEIGHTLEY.—OUTLINES OF HISTORY,

From the Earliest Period. By THOMAS KEIGHTLEY, Esq. New Edition, corrected and considerably improved. Fcp. 8vo. 6s. cloth ; or 6s. 6d. bound.

KEON (M. G.)—A HISTORY OF THE JESUITS,

Literary, Social, and Political, from the Birth of Ignatius Loyola to the present time. By Miles Gerald Keon. 8vo. [Preparing for publication.]

KIRBY & SPENCE.—AN INTRODUCTION TO ENTOMOLOGY ;

Or, Elements of the Natural History of Insects : comprising an account of noxious and useful Insects, of their Metamorphoses, Food, Stratagems, Habitations, Societies, Motions, Noises, Hybernation, Instinct, &c. By W. KIRBY, M.A. F.R.S. & L.S. Rector of Barham ; and W. SPENCE, Esq. F.R.S. & L.S. 6th Edit. corrected and much enlarged. 2 vols. 8vo. 31s. 6d. cloth.

KNOX (ALEXANDER).—REMAINS OF ALEXANDER KNOX,

Esq. of Dublin, M.R.I.A., containing Essays, chiefly explanatory, of Christian Doctrine, and Confidential Letters, with Private Papers, illustrative of the Writer's Character. Sentiments, and Life. 3d Edition, 4 vols. 8vo. £2. 8s. cloth.

LAING.—NOTES ON THE SCHISM FROM THE CHURCH OF

ROME, called the GERMAN-CATHOLIC CHURCH, instituted by J. Ronge and I. Czerzki, in October 1844, on occasion of the Pilgrimage to the Holy Coat at Treves. By S. LAING, Esq. Author of "Notes of a Traveller," "The Chronicles of the Kings of Norway," &c. 2d Edition. Fcp. 8vo. 5s. cloth.

LAING.—THE CHRONICLE OF THE KINGS OF NORWAY,

From the Earliest Period of the History of the Northern Sea Kings to the Middle of the Twelfth Century, commonly called *The Heimskringla*. Translated from the Icelandic of Snorro Sturleson, with Notes, and a Preliminary Discourse, by SAMUEL LAING, Author of "Notes of a Traveller," &c. 3 vols. 8vo. 36s. cloth.

LAING.—JOURNAL OF A RESIDENCE IN NORWAY,

During the years 1834, 1835, and 1836; made with a view to inquire into the Rural and Political Economy of that Country, and the Condition of its Inhabitants. By SAMUEL LAING, Esq. 2d Edition. 8vo. 14s. cloth.

LAING.—NOTES OF A TRAVELLER,

On the Social and Political State of France, Prussia, Switzerland, Italy, and other parts of Europe, during the present century. By SAMUEL LAING, Esq. 2d Edition. 8vo. 16s. cloth.

LAING.—A TOUR IN SWEDEN,

In 1838; comprising observations on the Moral, Political, and Economical State of the Swedish Nation. By SAMUEL LAING, Esq. 8vo. 12s. cloth.

LAPLACE (THE MARQUIS DE).—THE SYSTEM OF THE

WORLD. By M. LE MARQUIS DE LAPLACE. Translated from the French, and elucidated with Explanatory Notes. By the Rev. HENRY H. HARTE, F.T.C.D. M.R.I.A. 2 vols. 8vo. 24s. boards.

LARDNER'S CABINET CYCLOPÆDIA;

Comprising a Series of Original Works on History, Biography, Literature, the Sciences, Arts, and Manufactures. Conducted and edited by Dr. LARDNER.

The Series, complete, in One Hundred and Thirty-three Volumes, £39. 18s. The works, separate, 6s. per volume.

LARDNER AND WALKER.—A TREATISE ON ELECTRICITY,

MAGNETISM, and METEOROLOGY. By D. LARDNER, LL.D. F.R.S., and C. V. WALKER, Secretary of the Electrical Society. 2 vols. fcp. 8vo. with Vignette Titles, 12s. cloth.

LARDNER.—A TREATISE ON HEAT.

By D. LARDNER, LL.D., &c. Fcp. 8vo. with Woodcuts and Vignette Title, 6s. cloth.

LARDNER.—A TREATISE ON HYDROSTATICS AND PNEU-

MATICS. By Dr. LARDNER. New Edition. Fcp. 8vo. 6s. cloth.

LARDNER.—A TREATISE ON ARITHMETIC.

By D. LARDNER, LL.D. F.R.S. Fcp. 8vo. with Vignette Title, 6s. cloth.

LARDNER.—A TREATISE ON GEOMETRY,

And its Application to the Arts. By Dr. LARDNER. Fcp. 8vo. Vignette Title, and upwards of 200 figures, 6s. cloth.

L. E. L.—THE POETICAL WORKS OF LETITIA ELIZABETH

LONDON. New Edition, 4 vols. fcp. 8vo. with Illustrations by Howard, &c. 28s. cloth lettered; or handsomely bound in morocco, with gilt edges, £2. 4s.

The following Works separately:—

The IMPROVISATRICE. Fcp. 10s. 6d. cloth. | The GOLDEN VIOLET. Fcp. 8vo. 10s. 6d. cloth.

The VENETIAN BRACELET. 10s. 6d. cloth. | The TROUBADOUR. Fcp. 8vo. 10s. 6d. cloth.

LEE.—TAXIDERMY;

Or, the Art of Collecting, Preparing, and Mounting Objects of Natural History. For the use of Museums and Travellers. By Mrs. R. LEE (formerly Mrs. T. E. Bowdich), Author of "Memoirs of Cuvier," &c. 6th Edition, improved, with an account of a Visit to Walton Hall, and Mr. Waterton's method of Preserving Animals. Fcp. 8vo. with Wood Engravings, 7s. cloth.

LEE.—ELEMENTS OF NATURAL HISTORY,

For the use of Schools and Young Persons: comprising the Principles of Classification, interspersed with amusing and instructive original Accounts of the most remarkable Animals. By Mrs. R. LEE (formerly Mrs. T. E. BOWDICH), Author of "Taxidermy," "Memoirs of Cuvier," &c. 12mo. with Fifty-five Woodcuts, 7s. 6d. bound.

LEFEVRE (SIR G.)—AN APOLOGY FOR THE NERVES;

Or, their Importance and Influence in Health and Disease. By Sir GEORGE LEFEVRE, M.D. Fellow of the Royal College of Physicians; late Physician to the British Embassy at the Court of St. Petersburg, &c.; Author of "The Life of a Travelling Physician," "Thermal Comfort," &c. Post 8vo. 9s. cloth.

LEMPRIERE.—A CLASSICAL DICTIONARY;

Containing a copious Account of all the proper Names mentioned in Ancient Authors; with the Value of Coins, Weights, and Measures, used amongst the Greeks and Romans; and a Chronological Table. By T. LEMPRIERE, D.D. 20th Edition, corrected. 8vo. 9s. cloth.

LEREBOURS (N. P.)—A TREATISE ON PHOTOGRAPHY;

Containing the latest Discoveries appertaining to the Daguerriotype. Compiled from Communications by MM. Daguerre and Arago, and other eminent Men of Science. By N. P. LEREBOURS, Optician to the Observatory, Paris, &c. Translated by J. EGERTON. Post 8vo. with Plate, 7s. 6d. cloth.

LESLIE (C. R.)—MEMOIRS OF THE LIFE OF JOHN CON-

STABLE, Esq. R.A. Composed chiefly of his Letters. By C. R. LESLIE, R.A. Second Edition, with further Extracts from his Correspondence. Small 4to. with two Portraits (one from a new Sketch, by Mr. Leslie, and a Plate of "Spring," engraved by Lucas). 21s. cloth.

LIFE OF A TRAVELLING PHYSICIAN (THE),

From his first Introduction to Practice; including 20 Years' Wanderings throughout the greater part of Europe. By the late Sir GEORGE LEFEVRE. 3 vols. post 8vo. 3 coloured Plates, 31s. 6d. cloth.

LINDLEY.—INTRODUCTION TO BOTANY.

By Prof. J. LINDLEY, Ph.D. F.R.S. L.S. &c. 3d Edition with Corrections and considerable Additions. 8vo. with Six Plates and numerous Woodcuts, 18s. cloth.

LINDLEY.—FLORA MEDICA;

A Botanical Account of all the most important Plants used in Medicine, in different Parts of the World. By JOHN LINDLEY, Ph.D., F.R.S., &c. 8vo. 18s. cloth.

LINDLEY.—A SYNOPSIS OF THE BRITISH FLORA,

Arranged according to the Natural Orders. By Professor JOHN LINDLEY, Ph.D., F.R.S., &c. 3d Edition, with numerous additions, corrections, and improvements, 12mo. 10s. 6d. cloth.

LINDLEY.—THE THEORY OF HORTICULTURE;

Or, an Attempt to explain the Principal Operations of Gardening upon Physiological Principles. By JOHN LINDLEY, Ph.D., F.R.S. 8vo. with illustrations on Wood, 12s. cloth.

LINDLEY.—GUIDE TO ORCHARD AND KITCHEN GARDEN;

Or, an Account of the most valuable Fruits and Vegetables cultivated in Great Britain: with Kalendars of the Work required in the Orchard and Kitchen Garden during every month in the year. By G. LINDLEY, C.M.H.S. Edited by Prof. LINDLEY. 8vo. 16s. bds.

LINWOOD (W.)—ANTHOLOGIA OXONIENSIS,

Sive Florilegium e lusibus poeticis diversorum Oxoniensium Græcis et Latinis decerptum. Curante GULIELMO LINWOOD, M.A. Ædis Christi Alummo. [In the press.]

LLOYD.—A TREATISE ON LIGHT AND VISION.

By the Rev. H. LLOYD, M.A., Fellow of Trin. Coll. Dublin. 8vo. 15s. boards.

LORIMER.—LETTERS TO A YOUNG MASTER MARINER,

On some Subjects connected with his Calling. By CHARLES LORIMER. 3d Edition. 12mo. with an Appendix, 5s. 6d. cloth.

LOUDON (MRS.)—THE LADY'S COUNTRY COMPANION;

Or, How to Enjoy a Country Life Rationally. By Mrs. LOUDON, Author of "Gardening for Ladies," &c. New Edition. Fcp. 8vo. with an Engraving on Steel, and Illustrations on Wood, 7s. 6d. cloth.

LOUDON.—SELF-INSTRUCTION

For Young Gardeners, Foresters, Bailiffs, Land Stewards, and Farmers; in Arithmetic, Book-keeping, Geometry, Mensuration, Practical Trigonometry, Mechanics, Land-Surveying, Levelling, Planning and Mapping, Architectural Drawing, and Isometrical Projection and Perspective; with Examples shewing their applications to Horticulture and Agricultural Purposes. By the late J. C. LOUDON, F.L.S. H.S. &c. With a Portrait of Mr. Loudon, and a Memoir by Mrs. Loudon. 8vo. with Wood Engravings, 7s. 6d. cloth.

"This work is intended for a guide to the young gardener, bailiff, &c. in the higher and more scientific branches of their professions. It is in form a collection of plain and practical treatises, linked together by their connexion with horticultural and agricultural pursuits. The use of such a volume to fit an intelligent man for a superior station is evident. Indeed, a slight examination of its contents is sufficient to confirm Mr. Loudon's opinion of its usefulness. To superior gardeners, foresters, land-stewards, bailiffs, and farmers, it supplies a mass of sound instruction, which can no where else be found combined in the same space, or given in so lucid a style."—BRITANNIA.

LOUDON.—AN ENCYCLOPÆDIA OF GARDENING;

Presenting, in one systematic view, the History and Present State of Gardening in all Countries, and its Theory and Practice in Great Britain: with the Management of the Kitchen Garden, the Flower Garden, Laying-out Grounds, &c. By J. C. LOUDON, F.L.S. &c. A New Edition, enlarged and much improved. 1 large vol. 8vo. with nearly 1,000 Engravings on Wood, 50s. cloth.

LOUDON.—AN ENCYCLOPÆDIA OF TREES AND SHRUBS;

being the "Arboretum et Fruticetum Britannicum" abridged: containing the Hardy Trees and Shrubs of Great Britain, Native and Foreign, Scientifically and Popularly Described; with their Propagation, Culture, and Uses in the Arts; and with Engravings of nearly all the Species. Adapted for the use of Nurserymen, Gardeners, and Foresters. By J. C. LOUDON, F.L.S. &c. 1 large vol. 8vo. with 2000 Engravings on Wood, £2. 10s. cloth.

The Original Work may be had in 8 vols. 8vo. with above 400 Octavo Plates of Trees, and upwards of 2500 Woodcuts, £10, cloth.

LOUDON.—AN ENCYCLOPÆDIA OF AGRICULTURE;

Comprising the Theory and Practice of the Valuation, Transfer, Laying-out, Improvement, and Management of Landed Property, and of the Cultivation and Economy of the Animal and Vegetable productions of Agriculture: including all the latest Improvements, a general History of Agriculture in all Countries, a Statistical View of its present State, with Suggestions for its future progress in the British Isles; and Supplement, bringing down the work to the year 1844. By J. C. LOUDON, F.L.G.Z. and H.S. &c. 5th Edition. 1 large vol. 8vo. with upwards of 1100 Engravings on Wood, by Branston, £2. 10s. cloth.

The SUPPLEMENT, bringing down Improvements in the art of Field-Culture from 1831 to 1844 inclusive, comprising all the previous Supplements, and illustrated with 65 Engravings on Wood, may be had *separately*, 5s. sewed.

LOUDON.—AN ENCYCLOPÆDIA OF PLANTS;

Including all the Plants which are now found in, or have been introduced into, Great Britain; giving their Natural History, accompanied by such descriptions, engraved figures, and elementary details, as may enable a beginner, who is a mere English reader, to discover the name of every Plant which he may find in flower, and acquire all the information respecting it which is useful and interesting. The Specific Characters by an Eminent Botanist; the Drawings by J. D. C. SOWERBY, F.L.S. A New Edition, with New Supplement, comprising every desirable particular respecting all the Plants originated in, or introduced into, Britain between the first publication of the work, in 1829, and January 1840: with a new General Index to the whole work. Edited by J. C. LOUDON, prepared by W. H. BAXTER, Jun. and revised by George Don, F.L.S.; and 800 new Figures of Plants on Wood, from Drawings by J. D. C. SOWERBY, F.L.S. 1 very large vol. 8vo. with nearly 10,000 Wood Engravings, £3. 13s. 6d. cloth.—The last Supplement, *separately*, 8vo. 15s. cloth.

LOUDON.—HORTUS BRITANNICUS:

A Catalogue of all the Plants indigenous to or introduced into Britain. The 3d Edition, with a NEW SUPPLEMENT, prepared, under the direction of J. C. LOUDON, by W. H. BAXTER, and revised by GEORGE DON, F.L.S. 8vo. 31s. 6d. cloth.

The SUPPLEMENT *separately*, 8vo. 2s. 6d. sewed.

The LATER SUPPLEMENT *separately*, 8s.

LOUDON.—AN ENCYCLOPÆDIA OF COTTAGE, FARM, AND

VILLA ARCHITECTURE and FURNITURE. Containing Designs for Cottages, Villas, Farm Houses, Farmeries, Country Inns, Public Houses, Parochial Schools, &c.; with the requisite Fittings-up, Fixtures, and Furniture, and appropriate Offices, Gardens, and Garden Scenery: each Design accompanied by Analytical and Critical Remarks illustrative of the Principles of Architectural Science and Taste on which it is composed, and General Estimates of the Expense. By J. C. LOUDON, F.L.S. &c. New Edition, corrected, with a Supplement, containing 160 additional pages of letter-press and nearly 300 new engravings, 8vo. with more than 2000 Engravings on Wood, £3. 3s. cloth.—The Supplement, *separately*, 8vo. 7s. 6d. sewed.

LOUDON.—HORTUS LIGNOSIS LONDINENSIS;

Or, a Catalogue of all the Ligneous Plants cultivated in the neighbourhood of London. To which are added their usual prices in Nurseries. By J. C. LOUDON, F.L.S. &c. 8vo. 7s. 6d. cl.

LOUDON.—THE SUBURBAN GARDENER AND VILLA

COMPANION: comprising the Choice of a Villa or Suburban Residence, or of a situation on which to form one; the Arrangement and Furnishing of the House; and the Laying-out, Planting, and general Management of the Garden and Grounds; the whole adapted for grounds from one perch to fifty acres and upwards in extent; intended for the instruction of those who know little of Gardening or Rural Affairs, and more particularly for the use of Ladies. By J. C. LOUDON, F.L.S. &c. 8vo. with above 300 Wood Engravings, 20s. cloth.

LOW.—THE BREEDS OF THE DOMESTICATED ANIMALS

Of Great Britain Described. By DAVID LOW, Esq. F.R.S.E. Professor of Agriculture in the University of Edinburgh; Member of the Royal Academy of Agriculture of Sweden; Corresponding Member of the Conseil Royal d'Agriculture de France, of the Société Royale et Centrale, &c. &c. The Plates from Drawings by W. NICHOLSON, R.S.A. reduced from a Series of Oil Paintings, executed for the Agricultural Museum of the University of Edinburgh, by W. SHIELDS, R.S.A. 2 vols. atlas quarto, with 56 plates of animals, beautifully coloured after Nature, £16. 16s. half-bound in morocco.—Or in four separate portions; as follow:

The OX. 1 vol. atlas quarto, with 22 plates, £6. 16s. 6d. half-bound in morocco.

The SHEEP. 1 vol. atlas quarto, with 21 plates, £6. 16s. 6d. half-bound in morocco.

The HORSE. 1 vol. atlas quarto, with 8 plates, £3, half-bound in morocco.

The HOG. 1 vol. atlas quarto, with 5 plates, £2. 2s. half-bound in morocco.

LOW.—ON THE DOMESTICATED ANIMALS OF GREAT

BRITAIN; comprehending the Natural and Economical History of the Species and Breeds; Illustrations of the Properties of External Form; and Observations on the Principles and Practice of Breeding. By DAVID LOW, Esq. F.R.S.E. Professor of Agriculture in the University of Edinburgh; Member of the Royal Academy of Agriculture of Sweden; Corresponding Member of the Conseil Royal d'Agriculture de France, of the Société Royal et Centrale, &c.; Author of "Elements of Practical Agriculture," "Illustrations of the Breeds of the Domesticated Animals of the British Islands," "On Landed Property and the Economy of Estates," &c. 8vo. with Engravings on Wood, 25s. cloth.

"Prof. Low's work appears to us to treat fully of every branch of the subject of cattle-breeding which can be of service to the farmer. The improvement of soils, and fitting them for specific purposes; shewing by what means and to what extent the alteration of certain component parts is produced, and how the loss can be repaired; demonstrating the danger of pursuing similar systems under different circumstances, and that what is good at first may become bad by continuance; laying down rules for cultivation, for grazing, and for suiting the breeds of animals to the localities and climates when they, as it were, transform themselves, by degrees, to the necessities of their conditions; all these and many more kindred matters are handled by Mr. Low with masterly ability, the result of careful observation and prolonged experience. We cannot too strongly recommend his work as a treatise and vademecum to every cultivator of British land."—LITERARY GAZETTE.

LOW.—AN INQUIRY INTO THE NATURE OF THE SIMPLE

BODIES of CHEMISTRY. By DAVID LOW, Esq. F.R.S.E., Prof. of Agriculture in the University of Edinburgh. 8vo. 6s. cloth.

LOW (PROFESSOR).—ON LANDED PROPERTY

And the ECONOMY of ESTATES; comprehending the Relation of Landlord and Tenant, and the Principles and Forms of Leases; Farm-Buildings, Enclosures, Drains, Embankments, and other Rural Works; Minerals; and Woods. By DAVID LOW, Esq. F.R.S.E. Professor of Agriculture in the University of Edinburgh, &c.; Author of "Elements of Practical Agriculture," &c. 8vo. with numerous Wood Engravings, 21s. cloth.

LOW.—ELEMENTS OF PRACTICAL AGRICULTURE;

Comprehending the Cultivation of Plants, the Husbandry of the Domestic Animals, and the Economy of the Farm. By D. LOW, Esq. F.R.S.E., Prof. of Agriculture in University of Edinburgh. 4th Edit. with Alterations and Additions, and above 200 Woodcuts. 8vo. 21s. cloth.

MACAULAY.—CRITICAL AND HISTORICAL ESSAYS CON-

TRIBUTED to The EDINBURGH REVIEW. By the Right Hon. THOMAS BABINGTON MACAULAY. 3d Edition. 3 vols. 8vo. 36s. cloth.

MACAULAY.—LAYS OF ANCIENT ROME.

By the Right Hon. THOMAS BABINGTON MACAULAY. 7th Edition. Crown 8vo. 10s. 6d. cloth.

MACKAY (CHARLES)—THE SCENERY AND POETRY OF

THE ENGLISH LAKES; a Summer Ramble. By CHARLES MACKAY, Esq. Author of "Legends of the Isles," "The Salamandrine," "The Thames and its Tributaries," &c. 8vo. with beautiful Wood Engravings from Original Sketches. [Just ready.]

MACKENZIE.—THE PHYSIOLOGY OF VISION.

By W. MACKENZIE, M.D., Lecturer on the Eye in the University of Glasgow. 8vo. with Woodcuts, 10s. 6d. boards.

MACKINNON.—THE HISTORY OF CIVILISATION.

By WM. ALEXANDER MACKINNON, F.R.S., M.P. for Lymington. 2 vols. 8vo. 24s. cloth.

MACKINTOSH (SIR JAMES).—THE LIFE OF SIR THOMAS

MORE. By the Right Hon. Sir JAMES MACKINTOSH. Reprinted from the Cabinet Cyclopædia; and intended as a Present Book or School Prize. Fcp: 8vo. with Portrait, 5s. cloth; or bound in vellum gilt (*old style*), 8s.

MACKINTOSH (SIR JAMES).—SIR JAMES MACKINTOSH'S

MISCELLANEOUS WORKS; including his Contributions to The Edinburgh Review. Edited by ROBERT JAMES MACKINTOSH, Esq. 3 vols. 8vo. 42s. cloth.

MACKINTOSH, &c.—THE HISTORY OF ENGLAND.

By Sir JAMES MACKINTOSH; W. WALLACE, Esq.; and ROBERT BELL, Esq. 10 vols. fcp. 8vo. with Vignette Titles, £3. cloth.

M'CULLOCH.—A DICTIONARY, PRACTICAL, THEORETI-

CAL, AND HISTORICAL, OF COMMERCE AND COMMERCIAL NAVIGATION. Illustrated with Maps and Plans. By J. R. M'CULLOCH, Esq. An entirely New Edition, corrected throughout, enlarged, and improved; with a Supplement. 1 thick vol. 8vo. 50s. cloth; or 55s. strongly half-bound in russia, with flexible back.

*** This edition, which has been carefully corrected, comprises, besides the new Tariff, the new Acts relating to Banking, the Sugar Trade, Navigation and Customs, the hiring of Seamen, &c.; and is further enriched with valuable information from all parts of the world.

The SUPPLEMENT, for the use of purchasers of the last Edition, may be had separately, price 3s. 6d.

M'CULLOCH.—A DICTIONARY, GEOGRAPHICAL, STATISTICAL, AND HISTORICAL, of the various Countries, Places, and Principal Natural Objects in the WORLD. By J. R. M'CULLOCH, Esq. A New Edition. 2 thick vols. 8vo. with Six Large Maps, £4. cloth.

*.*The new Articles on the British Empire, England, Ireland, and Scotland, have been printed separately, as a Supplement to the former Edition. They comprise a pretty full Account of the Present State of the British Empire. 8vo. 5s. sewed.

M'CULLOCH.—THE LITERATURE OF POLITICAL ECONOMY; being a Classified Catalogue of the principal Works in the different departments of Political Economy, with Historical, Critical, and Biographical Notices. By J. R. M'CULLOCH, Esq. 8vo. 14s. cloth.

M'CULLOCH.—A TREATISE ON THE PRINCIPLES AND PRACTICAL INFLUENCE OF TAXATION and the FUNDING SYSTEM. By J. R. M'CULLOCH, Esq. 8vo. 15s. cloth.

MAITLAND (DR. CHARLES).—THE CHURCH IN THE CATACOMBS; being a Description of the Church existing in Rome during the First Four Centuries, illustrated by the Remains belonging to the Catacombs of Rome, including the contents of the Lapidarian Gallery of the Vatican, and other unpublished Collections. The materials obtained during a two years' residence in Rome. By CHARLES MAITLAND, M.D. 8vo. illustrated with very numerous Engravings on Wood. *[In the press.]*

MARCET.—CONVERSATIONS ON CHEMISTRY;

In which the Elements of that Science are familiarly Explained and Illustrated by Experiments. 14th Edition, enlarged and corrected. 2 vols. fcp. 8vo. 14s. cloth.

MARCET.—CONVERSATIONS ON NATURAL PHILOSOPHY;

In which the Elements of that Science are familiarly explained, and adapted to the comprehension of Young Persons. 10th Edition, enlarged and corrected by the Author. Fcp. 8vo. with 23 Plates, 10s. 6d. cloth.

MARCET.—CONVERSATIONS ON POLITICAL ECONOMY;

In which the Elements of that Science are familiarly explained. 7th Edition revised and enlarged. Fcp. 8vo. 7s. 6d. cloth.

MARCET.—CONVERSATIONS ON VEGETABLE PHYSIOLOGY; comprehending the Elements of Botany, with their application to Agriculture. 3d Edition. Fcp. 8vo. with 4 Plates, 9s. cloth.

MARCET.—CONVERSATIONS ON LAND AND WATER.

3d Edition, revised and corrected. Fcp. 8vo. with coloured Map, showing the comparative altitude of Mountains, 5s. 6d. cloth.

MARCET.—CONVERSATIONS ON LANGUAGE,

For Children. By Mrs. MARCET, Author of "Mary's Grammar," "Conversations on Chemistry," &c. 18mo. 4s. 6d. cloth.

MARCET.—WILLY'S GRAMMAR;

Interspersed with Stories, and intended for the Use of Boys. By Mrs. MARCET, Author of "Mary's Grammar," &c. New Edition. 18mo. 2s. 6d. cloth.

"A sound and simple work for the earliest ages."—QUARTERLY REVIEW (of "Mary's Grammar").

MARCET.—THE GAME OF GRAMMAR,

With a Book of Conversations shewing the Rules of the Game, and affording Examples of the manner of playing at it. In a varnished box, or done up as a post 8vo. volume in cloth, 8s.

MARCET.—LESSONS ON ANIMALS, VEGETABLES, AND

MINERALS. By Mrs. MARCET, Author of "Conversations on Chemistry," &c. 12mo. 2s. cl.

MARCET.—CONVERSATIONS ON THE HISTORY OF ENG-

LAND, for the Use of Children. By Mrs. MARCET, Author of "Conversations on Chemistry," &c. 2d Edition, with Additions, continuing the History to the Reign of George the Third. 18mo. 5s. cloth.

MARRIAGE GIFT.

By a MOTHER. A Legacy to her Children. Post 8vo. 5s. cloth.

MARRYAT.—MASTERMAN READY;

Or, the Wreck of the Pacific. Written for Young People. By CAPTAIN MARRYAT, C.B. Author of "Peter Simple," &c. 3 vols. fcp. 8vo. with numerous Engravings on Wood, 22s. 6d. cloth.

MARRYAT.—THE SETTLERS IN CANADA.

Written for Young People. By Capt. MARRYAT, C.B. Author of "Peter Simple," "Masterman Ready," &c. 2 vols. fcp. 8vo. 12s. cloth.

MARRYAT (CAPT.)—THE MISSION ;

Or, Scenes in Africa. Written for Young People. By Capt. MARRYAT, C.B., Author of "Peter Simple," "Masterman Ready," "The Settlers in Canada," &c. 2 vols. fcp. 8vo. 12s. cloth.

"The simple narrative style and Daniel-De-Foe-like verisimilitude of Captain Marryat's 'Mission,' carry his reader through all the scenes with the ease of an ambling steed; and at the end he finds that his amusement has been made the vehicle for conveying a remarkably clear notion of the interior of South Africa, its geography, its people, its wild animals, its habits, and its adventures for European explorers."—LITERARY GAZETTE.

MAUNDER.—THE SCIENTIFIC & LITERARY TREASURY ;

A new and popular Encyclopædia of Science and the Belles-Lettres; including all Branches of Science, and every Subject connected with Literature and Art. The whole written in a familiar style, adapted to the comprehension of all persons desirous of acquiring information on the subjects comprised in the work, and also adapted for a Manual of convenient Reference to the more instructed. By SAMUEL MAUNDER. 4th Edition. 1 thick vol. fcp. 8vo. with engraved Frontispiece, 10s. cloth; bound in roan, 12s.

MAUNDER.—THE TREASURY OF HISTORY ;

Comprising a General Introductory Outline of Universal History, Ancient and Modern, and a Series of separate Histories of every principal Nation that exists; their Rise, Progress, and Present Condition, the Moral and Social Character of their respective inhabitants, their Religion, Manners, and Customs, &c. By SAMUEL MAUNDER. 2d Edition. 1 thick vol. fcp. 8vo. 10s. cloth; bound in roan, 12s.

MAUNDER.—THE BIOGRAPHICAL TREASURY ;

Consisting of Memoirs, Sketches, and brief Notices of above 12,000 Eminent Persons of all Age, and Nations, from the Earliest Period of History; forming a new and complete Dictionary of Universal Biography. By SAMUEL MAUNDER. 5th Edition, revised throughout, and containing a copious Supplement, brought down to December, 1844. 1 thick volume. Fcp. 8vo. with engraved Frontispiece, 10s. cloth; bound in roan, 12s.

MAUNDER.—THE TREASURY OF KNOWLEDGE,

And LIBRARY OF REFERENCE: in Two Parts. 16th Edition, thoroughly revised and enlarged. Fcp. 8vo. with engraved Titles and Frontispieces, 10s.; or, handsomely bound, 12s.

** The principal contents of the present new and thoroughly revised edition of "The Treasury of Knowledge" are—a new and enlarged English Dictionary, with a Grammar, Verbal Distinctions, and Exercises; a new Universal Gazetteer; a compendious Classical Dictionary; an Analysis of History and Chronology; a Dictionary of Law Terms; a new Synopsis of the British Peerage; and various useful Tabular Addenda.

MAUNDER.—THE UNIVERSAL CLASS-BOOK :

A new Series of Reading Lessons (original and selected) for Every Day in the Year; each Lesson recording some important Event in General History, Biography, &c. which happened on the day of the month under which it is placed, or detailing, in familiar language, interesting facts in Science; also a variety of Descriptive and Narrative Pieces, interspersed with Poetical Gleanings: Questions for Examination being appended to each day's Lesson, and the whole carefully adapted to Practical Tuition. By SAMUEL MAUNDER, Author of "The Treasury of Knowledge." 2d Edition, revised. 12mo. 5s. bound.

MICHELET (J.)—PRIESTS, WOMEN, AND FAMILIES.

By J. MICHELET. Translated from the French (3d edition, which contains Michelet's Preface, in reply to the attacks of the Jesuits), with the Author's approbation, by C. Cocks, Bachelier-ès-Lettres, and Professor of the Living Languages in the Royal Colleges of France; Translator of "Mignet's Antonio Perez and Philip II. of Spain," &c. New Edition. Post 8vo. 9s. cloth.

** Also, a Cheap Edition, uniform with Mr. Murray's "Home and Colonial Library," 1s. 4d. sewed.

MICHELET (J.)—THE PEOPLE.

By M. MICHELET, Member of the Institute of France, &c. Translated, with the approbation of the Author, by C. Cocks, B.L. Professor of the Living Languages in the Royal Colleges of France; Translator of Michelet's "Priests, Women, and Families," Mignet's "Antonio Perez and Philip II. of Spain," &c. Post 8vo. 9s. cloth.

** Also, a Cheap Edition, uniform with Mr. Murray's "Home and Colonial Library," 1s. 6d. sewed.

MIGNET (M.)—ANTONIO PEREZ AND PHILIP II. OF SPAIN.

By M. MIGNET, Member of the Institute of France, Perpetual Secretary of the Academy of Moral and Political Sciences, &c. Translated by C. Cocks, B.L. Professor of the Living Languages in the Royal Colleges of France; Translator of Michelet's "Priests, Women, and Families," and of Quinet's "Church and Modern Society," "Christianity and the French Revolution," &c. Post 8vo. 9s. cloth.

"A series of striking articles on the tragical contests of Perez and Philip. It is extremely well translated, and forms a very interesting volume. There are few lines in history of more adventure and vicissitude than that of Perez, and few more suggestive of reflection. We find in M. Mignet's researches much that we were not before acquainted with, even of the residence in England; and the weaving of the authorities into the text is skilfully managed. The moral of the reckless life and melancholy death of Perez is well pointed, and the reader's interest sustained till the last sentence."—EXAMINER.

MILES (WILLIAM).—THE HORSE'S FOOT, AND HOW TO

KEEP IT SOUND. By WILLIAM MILES, Esq. Royal 8vo. with Engravings, 7s. cloth.

"A capital work, treating of the anatomy of the foot—the practice of shoeing, and the proper stable management of the horse, with especial reference to the treatment of the hoof. Mr. Miles has written a very useful essay, which should be read by every gentleman owning a horse."—GARDENERS' CHRONICLE.

MILNER (REVS. J. & I.)—THE HISTORY OF THE CHURCH
of CHRIST. By the Rev. JOSEPH MILNER, A.M. With Additions and Corrections by the late Rev. ISAAC MILNER, D.D. F.R.S., Dean of Carlisle, and President of Queen's College, Cambridge. A New Edition. 4 vols. 8vo. £2. 8s. boards.

MONTAUBAN (MRS. E.)—A YEAR AND A DAY IN THE EAST; or, Wanderings over Land and Sea. By Mrs. ELIOT MONTAUBAN. Post 8vo. [In the press.]

MONTGOMERY'S (JAMES) POETICAL WORKS.

New and only Complete Edition. With some additional Poems, and Autobiographical Prefaces. Collected and Edited by Mr. MONTGOMERY. 4 vols. fcp. 8vo. with Portrait, and Seven other beautifully-engraved Plates, 20s. cloth; or bound in morocco, 36s.

MOORE'S POETICAL WORKS;

Containing the Author's recent Introduction and Notes. Complete in one volume, uniform with Lord Byron's Poems. With a New Portrait, by George Richmond, engraved in the line manner, and a View of Sloperton Cottage, the Residence of the Poet, by Thomas Creswick, A.R.A. Medium 8vo. 21s. cloth; or 42s. bound in morocco, in the best manner, by Hayday.

. Also, an Edition in 10 vols. fcp. 8vo. with Portrait, and 19 Plates £2. 10s. cloth morocco, £4. 10s.

MOORE'S LALLA ROOKH: AN ORIENTAL ROMANCE.

New Edition. Medium 8vo. illustrated with 13 Engravings finished in the highest style of the Art, 21s. cloth; morocco, 35s; or, with India Proof Plates, 42s. cloth.

MOORE'S LALLA ROOKH: AN ORIENTAL ROMANCE.

New Edition. Fcp. 8vo. with Four Engravings, from Paintings by Westall, 10s. 6d. cloth; or, handsomely bound in morocco, in the best manner, 14s.

MOORE'S IRISH MELODIES.

Illustrated by D. MACLISE, R.A. Imp. 8vo. with 161 Designs engraved on Steel, £3. 3s. bds.; or £4. 14s. 6d. bound in morocco, by Hayday. Proof Impressions (only 200 copies printed, of which a few remain), £6. 6s. boards.

. India Proofs before Letters of the 161 Designs, on Quarter Colombier, in Portfolio (only 25 copies printed, of which a few remain), £31. 10s.

India Proofs before Letters of the 51 Large Designs, on Quarter Colombier, in Portfolio (only 25 copies printed, of which a few remain), £18. 18s.

MOORE'S IRISH MELODIES.

New Edition. Fcp. 8vo. with Engraved Title and Vignette, 10s. cloth; or bound in morocco, in the best manner, 13s. 6d.

MOORE.—THE HISTORY OF IRELAND,

From the Earliest Kings of that Realm down to its Latest Chief. By THOMAS MOORE, Esq. 4 vols. fcp. 8vo., with Vignette Titles, 24s. cloth.

MORAL OF FLOWERS.

3d Edition. Royal 8vo. with 24 beautifully-coloured Engravings, £1. 10s. half-bound.

MORTON.—A VETERINARY TOXICOLOGICAL CHART,

Containing those Agents known to cause Death in the Horse; with the Symptoms, Antidotes, Action on the Tissues, and Tests. By W. J. T. MORTON. 12mo. 6s. in cas. on rollers, 8s. 6d.

MORTON.—A MANUAL OF PHARMACY,

For the Student in Veterinary Medicine; containing the Substances employed at the Royal Veterinary College, with an attempt at their classification, and the Pharmacopœia of that Institution. By W. J. T. MORTON. 3d Edition. 12mo. 10s. cloth.

MOSELEY.—THE MECHANICAL PRINCIPLES OF ENGI-

NEERING AND ARCHITECTURE. By the Rev. H. MOSELEY, M.A. F.R.S., Professor of Natural Philosophy and Astronomy in King's College, London; and Author of "Illustrations of Mechanics," &c. 8vo. with Woodcuts and Diagrams, 24s. cloth.

MOSELEY.—ILLUSTRATIONS OF PRACTICAL MECHANICS.

By the Rev. H. MOSELEY, M.A., Professor of Natural Philosophy and Astronomy in King's College, London; being the First Volume of the Illustrations of Science by the Professors of King's College. New Edition. Fcp. 8vo. with numerous Woodcuts, 8s. cloth.

MOSHEIM'S ECCLESIASTICAL HISTORY,

Ancient and Modern. Translated, with copious Notes, by JAMES MURDOCK, D.D. Edited, with Additions, by HENRY SOAMES, M.A. Rector of Stapleford-Tawney, Essex. New Edition, revised, and continued to the present time. 4 vols. 8vo. 48s. cloth.

MÜLLER.—INTRODUCTION TO A SCIENTIFIC SYSTEM

of MYTHOLOGY. By C. O. MÜLLER, Author of "The History and Antiquities of the Doric Race," &c. Translated from the German by John Leitch. 8vo. uniform with "Müller's Dorians," 12s. cloth.

MURRAY.—ENCYCLOPÆDIA OF GEOGRAPHY;

Comprising a complete Description of the Earth: exhibiting its Relation to the Heavenly Bodies, its Physical Structure, the Natural History of each Country, and the Industry, Commerce, Political Institutions, and Civil and Social State of all Nations. By HUGH MURRAY, F.R.S.E.: assisted in Astronomy, &c. by Professor Wallace; Geology, &c. by Professor Jameson; Botany, &c. by Sir W. J. Hooker; Zoology, &c. by W. Swainson, Esq. New Edition, with Supplement, bringing down the Statistical Information contained in the work to Dec. 1843; with 82 Maps, drawn by Sidney Hall, and upwards of 1000 other Engravings on Wood, from Drawings by Swainson, T. Landseer, Sowerby, Strutt, &c. representing the most remarkable Objects of Nature and Art in every Region of the Globe. 8vo. & 3. cloth.

NECKER DE SAUSSURE.—PROGRESSIVE EDUCATION;

Or, Considerations on the Course of Life. Translated and abridged from the French of Madame NECKER DE SAUSSURE, by Miss HOLLAND. 3 vols. fcp. 8vo. 19s. 6d. cloth.

. Separately, Vols. I. and II. 12s.; Vol. III. 7s. 6d.

NESBIT (A.)—A TREATISE ON PRACTICAL MENSURATION;

Containing the most approved Methods of drawing Geometrical Figures; Mensuration of Superficies; Land-Surveying; Mensuration of Solids; the use of the Carpenter's Rule; Timber Measure, &c. By A. NESBIT. 12th Edition. 12mo. with nearly 300 Woodcuts, 6s. bd. KEY. 7th Edition. 12mo. 5s. bound.

NEWELL (REV. R. H.)—THE ZOOLOGY OF THE ENGLISH

POETS, corrected by the Writings of Modern Naturalists. By the Rev. R. H. NEWELL, Rector of Little Horstead. Fcp. 8vo. with Engravings on Wood, 5s. 6d. cloth.

NICOLAS.—THE CHRONOLOGY OF HISTORY.

Containing Tables, Calculations, and Statements indispensable for ascertaining the Dates of Historical Events, and of Public and Private Documents, from the Earliest Period to the Present Time. By Sir HARRIS NICOLAS, K.C.M.G. Second edition, corrected throughout. Fcp. 8vo. with Vignette Title, 6s. cloth.

ORDNANCE MAPS (THE), AND PUBLICATIONS OF THE

GEOLOGICAL SURVEY OF THE UNITED KINGDOM.—Messrs. LONGMAN and Co. have been appointed by the Board of Ordnance Agents for the sale of the Maps of the Ordnance Survey of Great Britain. Also, sole Agents for the sale of the Maps, Sections, and Books of the Geological Survey of the United Kingdom, and of the Museum of Economic Geology, under the Chief Commissioner of Her Majesty's Woods, Works, and Land Revenues.

. Complete detailed Catalogues of both Series may be had on application.

OWEN.—LECTURES ON THE COMPARATIVE ANATOMY

AND PHYSIOLOGY OF THE INVERTEBRATE ANIMALS, delivered at the Royal College of Surgeons in 1843. By RICHARD OWEN, F.R.S. Hunterian Professor to the College. From Notes taken by William White Cooper, M.R.C.S. and revised by Professor Owen. With Glossary and Index. 8vo. with nearly 140 Illustrations on Wood, 14s. cloth.

. A Second Volume, (*On the Vertebrata*) is preparing for publication.

PARABLES (THE).

THE PARABLES of OUR LORD, richly illuminated, with appropriate Borders, printed in Colours and in Black and Gold; with a Design from one of the early German Engravers. Square fcp. 8vo. uniform in size with the "Sermon on the Mount," 21s. in a massive carved binding in the style of the beginning of the Sixteenth Century; or 30s. bound in morocco by Hayday. [Nearly ready.]

PARKES.—DOMESTIC DUTIES;

Or, Instructions to Young Married Ladies on the Management of their Households, and the Regulation of their Conduct in the various Relations and Duties of Married Life. By Mrs. W. PARKES. 5th Edition. Fcp. 8vo. 9s. cloth.

PARNELL.—A TREATISE ON ROADS;

Wherein the Principles on which Roads should be made are explained and illustrated by the Plans, Specifications, and Contracts made use of by Thomas Telford, Esq. on the Holyhead Road. By the Right Hon. Sir HENRY PARNELL, Bart., Hon. Memb. Inst. Civ. Eng. London. Second Edition, greatly enlarged. 8vo. with 9 large plates, £1. 1s. cloth.

PATON (A. A.)—SERVIA, THE YOUNGEST MEMBER OF THE

EUROPEAN FAMILY; or, a Residence in Belgrade, and Travels through the Highlands and Woodlands of the Interior, during the years 1843 and 1844. By ANDREW ARCHIBALD PATON, Esq. Post 8vo. with Portrait and Plate, 12s. cloth.

PATON (A. A.)—THE MODERN SYRIANS;

Or, Native Society in Damascus, Aleppo, and the Mountains of the Druses. Post 8vo. 10s. 6d. cloth.

PEDESTRIAN AND OTHER REMINISCENCES, AT HOME

AND ABROAD. With Sketches of Country Life. By SYLVANUS. Post 8vo. with Frontispiece and Vignette, 10s. 6d. cloth.

PEARSON.—AN INTRODUCTION TO PRACTICAL ASTRO-NOMY. By the Rev. W. PEARSON, LL.D. F.R.S., &c., Rector of South Killworth, Leicestershire, and Treasurer to the Astronomical Society of London. 2 vols. 4to. with Plates, £7. 7s. boards.

Vol. 1 contains Tables, recently computed, for facilitating the Reduction of Celestial observations; and a popular explanation of their Construction and Use.

Vol. 2 contains Descriptions of the various Instruments that have been usefully employed in determining the Places of the Heavenly Bodies, with an Account of the Methods of Adjusting and Using them.

PERCIVALL.—HIPPOPATHOLOGY;

A Systematic Treatise on the Disorders and Lameness of the Horse; with their modern and most approved Methods of Cure; embracing the doctrines of the English and French Veterinary Schools. By W. PERCIVALL, M.R.C.S. Veterinary Surgeon in the 1st Life Guards. 3 vols. 8vo. with Woodcuts. Vol. 1, 10s. 6d.; Vols. 2 and 3, 14s. each, boards.

PERCIVALL.—THE ANATOMY OF THE HORSE;

Embracing the Structure of the Foot. By W. PERCIVALL, M.R.C.S. 8vo. £1, cloth.

PEREIRA.—A TREATISE ON FOOD AND DIET:

With Observations on the Dietetical Regimen suited for Disordered States of the Digestive Organs; and an Account of the Dietaries of some of the principal Metropolitan and other Establishments for Paupers, Lunatics, Criminals, Children, the Sick, &c. By JON. PEREIRA, M.D. F.R.S. & L.S. Author of "Elements of Materia Medica." 8vo. 16s. cloth.

PERRY (DR. W. C.)—GERMAN UNIVERSITY EDUCATION;

Or, the Professors and Students of Germany. By WALTER C. PERRY, Phil. D. of the University of Göttingen. Post 8vo. 4s. 6d. cloth.

PERICLES.

A Tale of Athens in the 83d Olympiad. By the Author of "A Brief Sketch of Greek Philosophy." 2 vols. post 8vo. [Just ready.]

PESCHEL (C. F.)—ELEMENTS OF PHYSICS.

Part 1—Ponderable Bodies. By C. F. PESCHEL, Principal of the Royal Military College, Dresden. Translated from the German, with Notes, by E. WEST. Fcp. 8vo. with Diagrams and Woodcuts. 7s. 6d. cloth.

** Part II. containing the Physics of Imponderable Bodies (Light, Heat, Magnetism, Electricity, and Electro-Dynamics), is *in the press*.

PHILLIPS.—AN ELEMENTARY INTRODUCTION TO MINE-

RALOGY; comprising a Notice of the Characters and Elements of Minerals; with Accounts of the Places and Circumstances in which they are found. By WILLIAM PHILLIPS, F.L.S. M.G.S. &c. 4th Edition, considerably augmented by R. ALLAN, F.R.S.E. 8vo. with numerous Cuts, 12s. cloth.

PHILLIPS.—FIGURES AND DESCRIPTIONS OF THE

PALÆOZOIC FOSSILS of CORNWALL, DEVON, and WEST SOMERSET; observed in the course of the Ordnance Geological Survey of that District. By JOHN PHILLIPS, F.R.S. F.G.S. &c. Published by Order of the Lords Commissioners of H.M. Treasury. 8vo. with 60 Plates, comprising very numerous figures, 9s. cloth.

PHILLIPS.—A GUIDE TO GEOLOGY.

By JOHN PHILLIPS, F.R.S.G.S., &c. Fcp. 8vo. with Plates, 6s. cloth.

PHILLIPS.—A TREATISE ON GEOLOGY.

By JOHN PHILLIPS, F.R.S.G.S., &c. 2 vols. fcp. 8vo. with Vignette Titles and Woodcuts, 12s. cloth.

PITMAN (REV. J. R.)—SERMONS

On the principal Subjects comprised in the Book of Psalms, abridged from Eminent Divines. By the Rev. J. R. PITMAN, A.M. Minister of St. Barnabas Church, Kensington. 8vo. [In the press.]

** This volume will contain about 100 brief Discourses, supplementary to "Two Courses of Sermons relating to the Lessons, Epistles, and Gospels of the Liturgy of the Established Church," by the same Editor.

PLYMLEY (PETER).—LETTERS ON THE SUBJECT OF THE

CATHOLICS TO MY BROTHER ABRAHAM, WHO LIVES IN THE COUNTRY. By PETER PLYMLEY. 21st Edition. Post 8vo. 7s. cloth.

POET'S PLEASAUNCE (THE);

Or, Garden Full of all Sorts of Pleasant Flowers, which our Pleasant Poets have in Past Time (for Pastime) Planted: with the right ordering of them. By EDEN WARWICK. In 1 vol. with Border Illustrations. [In the press.]

POISSON (S. D.)—A TREATISE ON MECHANICS.

By S. D. POISSON. 2d Edition. Translated from the French, and illustrated with Explanatory Notes, by the Rev. HENRY H. HARTE, late Fellow of Trinity College, Dublin. 2 vols. 8vo. £1. 8s. cloth.

POPE (ALEXANDER).—THE WORKS OF ALEXANDER POPE.

Edited by THOMAS ROSCOE, Esq. With the Author's Life. A New Edition, 8 vols. 8vo.
[In the press.]

PORTER.—A TREATISE ON THE MANUFACTURE OF SILK.

By G. R. PORTER, Esq. F.R.S. Author of "The Progress of the Nation," &c. 1 vol. 8vo. with Vignette Title, and 39 Engravings on Wood, 6s. cloth.

PORTER.—A TREATISE ON THE MANUFACTURES OF

PORCELAIN AND GLASS. By G. R. PORTER, Esq. F.R.S. Fcp. 8vo. with Vignette Title and 50 Woodcuts, 6s. cloth.

PORTLOCK.—REPORT ON THE GEOLOGY OF THE COUNTY

of LONDONDERRY, and of Parts of Tyrone and Fermanagh, examined and described under the Authority of the Master-General and Board of Ordnance. By J. E. PORTLOCK, F.R.S. &c. 8vo. with 48 Plates, 24s. cloth.

POWELL.—THE HISTORY OF NATURAL PHILOSOPHY,

From the Earliest Periods to the Present Time. By BADEN POWELL, M.A., Savilian Professor of Mathematics in the University of Oxford. Fcp. 8vo. Vignette Title, 6s. cloth.

PYCROFT (REV. J.)—A COURSE OF ENGLISH READING,

adapted to every Taste and Capacity: with Anecdotes of Men of Letters. By the Rev. JAMES PYCROFT, B.A. Trinity College, Oxford; Author of "Latin Grammar Practice," and "Greek Grammar Practice." Fcp. 8vo. 6s. 6d. cloth.

QUARTERLY JOURNAL OF THE GEOLOGICAL SOCIETY

of LONDON. Edited by DAVID THOMAS ANSTED, M.A. F.R.S. Fellow of Jesus College, Cambridge; Professor of Geology in King's College, London; Vice-Secretary of the Geological Society. 8vo. 4s. each number, sewed.
[Published quarterly.]

RANKE'S HISTORY OF THE REFORMATION.

Translated by SARAH AUSTIN, Translator of Ranke's "History of the Popes." Vols. 1 and 2. 8vo. 30s. cloth. ** The 3d Volume is in the press.

REECE.—THE MEDICAL GUIDE,

For the use of the Clergy, Heads of Families, Seminaries, and Junior Practitioners in Medicine; comprising a complete Modern Dispensatory, and a Practical Treatise on the Distinguishing Symptoms, Causes, Prevention, Cure and Palliation, of the Diseases incident to the Human Frame. By R. REECE, M.D. late Fellow of the Royal College of Surgeons of London, &c. 16th Edition. 8vo. 12s. boards.

REID (DR.)—ILLUSTRATIONS OF THE PRINCIPLES AND

PRACTICE OF WARMING and VENTILATING, with Preliminary Remarks on Health and Length of Life. By D. B. REID, M.D. F.R.S.E. 8vo. with Diagrams, and 320 Engravings on wood, 16s. cloth.

REPTON.—THE LANDSCAPE GARDENING & LANDSCAPE

ARCHITECTURE of the late HUMPHRY REPTON, Esq.; being his entire works on these subjects. New Edition, with an historical and scientific Introduction, a systematic Analysis, a Biographical Notice, Notes, and a copious alphabetical Index. By J. C. LONDON, F.L.S. &c. Originally published in 1 folio and 3 quarto volumes, and now comprised in 1 vol. 8vo. illustrated by upwards of 250 Engravings, and Portrait, 30s. cloth; with coloured plates, £3. 6s. cloth.

REYNARD THE FOX:

A renowned Apologue of the Middle Age. Reproduced in Rhyme. Embellished throughout with Scroll Capitals, in Colours, from Wood-block Letters made expressly for this work, after Designs of the 12th and 13th Centuries. With an Introduction, by SAMUEL NAYLOR, late of Queen's College, Oxford. Large Square 8vo. 18s. vellum cloth.

RIDDLE.—A COMPLETE ENGLISH-LATIN AND LATIN-

ENGLISH DICTIONARY, compiled from the best sources, chiefly German. By the Rev. J. E. RIDDLE, M.A. 4th Edition. 8vo. 31s. 6d. cloth.

** Separately—The English-Latin part, 10s. 6d. cloth; the Latin-English part, 21s. cloth.

RIDDLE.—A DIAMOND LATIN ENGLISH DICTIONARY.

For the Waistcoat-pocket. A Guide to the Meaning, Quality, and right Accentuation of Latin Classical Words. By the Rev. J. E. RIDDLE, M.A. Royal 32mo. 4s. bound.

RIDDLE.—ECCLESIASTICAL CHRONOLOGY;

Or, Annals of the Christian Church, from its Foundation to the present Time. Containing a View of General Church History, and the Course of Secular Events; the Limits of the Church and its Relations to the State; Controversies; Sects and Parties; Rites, Institutions, and Discipline; Ecclesiastical Writers. The whole arranged according to the order of Dates, and divided into Seven Periods. To which are added, Lists of Councils and Popes, Patriarchs, and Archbishops of Canterbury. By the Rev. J. E. RIDDLE, M.A., Author of "The Complete Latin Dictionary." 8vo. 15s. cloth.

RIDDLE.—LETTERS FROM AN ABSENT GODFATHER;

Or, a Compendium of Religious Instruction for Young Persons. By the Rev. J. E. RIDDLE, M.A. Fcp. 8vo. 6s. cloth.

RITCHIE (ROBERT.)—RAILWAYS: THEIR RISE AND

PROGRESS, and CONSTRUCTION. With Remarks on Railway Accidents, and Proposals for their Prevention. By ROBERT RITCHIE, Esq. Fcp. 8vo. [Just ready.]

RIVERS.—THE ROSE AMATEUR'S GUIDE;

Containing ample Descriptions of all the fine leading varieties of Roses, regularly classed in their respective Families; their History and mode of Culture. By T. RIVERS, Jun. 3d Edition, corrected and improved. Fcp. 8vo. 6s. cloth.

ROBINSON (JAMES).—THE WHOLE ART OF CURING,

PICKLING, AND SMOKING EVERY DESCRIPTION OF MEAT AND FISH, according to both the British and Foreign Modes. To which is appended, a Description of the requisite Apparatus. By JAMES ROBINSON, Eighteen Years a Practical Curer. Fcp. 8vo. [Just ready.]

ROBERTS (GEORGE).—THE LIFE, PROGRESSES, AND RE-

BELLION of JAMES DUKE of MONMOUTH, to his Capture and Execution; with a full Account of the Bloody Assizes, and copious Biographical Notices. By GEORGE ROBERTS, Author of "The History of Lyme Regis," &c. &c. 2 vols. post 8vo. with Portrait, Maps, and other Illustrations, 24s. cloth.

ROBERTS.—AN ETYMOLOGICAL AND EXPLANATORY

DICTIONARY of the Terms and Language of GEOLOGY; designed for the early Student, and those who have not made great progress in the Science. By G. ROBERTS. Fcp. 6s. cloth.

ROBINSON.—GREEK AND ENGLISH LEXICON TO THE

NEW TESTAMENT. By E. ROBINSON, D.D. Author of "Biblical Researches." Edited, with careful revision, corrections, &c. by the Rev. Dr. BLOOMFIELD. 8vo. 18s. cloth.

ROGERS.—THE VEGETABLE CULTIVATOR;

Containing a plain and accurate Description of all the different Species of Culinary Vegetables, with the most approved Method of Cultivating them by Natural and Artificial Means, and the best Modes of Cooking them; alphabetically arranged. Together with a Description of the Physical Herbs in General Use. Also, some Recollections of the Life of PHILIP MILLER, F.A.S., Gardener to the Worshipful Company of Apothecaries at Chelsea. By JOHN ROGERS, Author of "The Fruit Cultivator." 2d Edition, fcp. 8vo. 7s. cloth.

ROME.—THE HISTORY OF ROME.

(In Lardner's Cyclopædia). 2 vols. fcp. 8vo. with Vignette Titles, 12s. cloth.

ROSCOE.—LIVES OF EMINENT BRITISH LAWYERS.

By HENRY ROSCOE, Esq. Fcp. 8vo. with Vignette Title, 6s. cloth.

SANDBY (REV. G.)—MESMERISM AND ITS OPPONENTS:

With a Narrative of Cases. By the Rev GEORGE SANDBY, Jun. Vicar of Flixton, and Rector of All Saints with St. Nicholas, South Elmham, Suffolk; Domestic Chaplain to the Right Hon. the Earl of Abergavenny. Fcp. 8vo. 6s. cloth.

SANDHURST COLLEGE MATHEMATICAL COURSE.

1. ELEMENTS of ARITHMETIC and ALGEBRA. By W. SCOTT, Esq. A.M. and F.R.A.S. Second Mathematical Professor in the Institution. 8vo. 16s. bound.

2. ELEMENTS of GEOMETRY. By JOHN NARRIEN, Professor of Mathematics in the Institution. 8vo. with many diagrams, 10s. 6d. bound.

3. PLAIN TRIGONOMETRY and MENSU-

RATION. By W. SCOTT, Esq. A.M. and F.R.A.S., Second Mathematical Master in the Institution. 8vo. 9s. 6d. bound.

5. PRACTICAL ASTRONOMY and GEODESY, including the Projections of the Sphere, and Spherical Trigonometry. By JOHN NARRIEN, F.R.S. and R.A.S. Professor of Mathematics in the Institution. 8vo. 14s. bound.

SANDFORD (REV. JOHN).—PAROCHIALIA,

Or, Church, School, and Parish. By JOHN SANDFORD, M.A. Vicar of Dunchurch, Chaplain to the Lord Bishop of Worcester, Hon. Canon of Worcester, and Rural Dean. 8vo. with numerous Woodcuts, 16s. cloth.

SANDFORD.—WOMAN IN HER SOCIAL AND DOMESTIC

CHARACTER. By Mrs. JOHN SANDFORD. 6th Edition. Fcp. 8vo. 6s. cloth.

SANDFORD.—FEMALE IMPROVEMENT.

By Mrs. JOHN SANDFORD. 2d Edition. Fcp. 8vo. 7s. 6d. cloth.

SCHLEIDEN (PROFESSOR).—PRINCIPLES OF SCIENTIFIC

BOTANY. By M. J. SCHLEIDEN, Professor of Botany at Jena. Translated by E. LANKES-TER, M.D. F.L.S. 8vo. with numerous Wood Engravings. [Preparing for publication.]

SCOTT.—THE HISTORY OF SCOTLAND.

By Sir WALTER SCOTT, Bart. New edition. 2 vols. fcp. 8vo. with Vignette Titles, 12s. cloth.

SEAWARD.—SIR EDWARD SEAWARD'S NARRATIVE OF

HIS SHIPWRECK, and consequent Discovery of certain Islands in the Caribbean Sea: with a detail of many extraordinary and highly interesting Events in his Life, from 1733 to 1749, as written in his own Diary. Edited by Miss JANE PORTER. 3d Edition, with a New Nautical and Geographical Introduction, containing Extracts from a Paper by Mr. C. F. Collett, of the Royal Navy, identifying the islands described by Sir E. Seaward. 2 vols. post 8vo. 21s. cloth.

SELECT WORKS OF THE BRITISH POETS,

From Ben Jonson to Beattie. With Biographical and Critical Prefaces, by DR. AIKIN. A New Edition, with Supplement, by LUCY AIKIN; consisting of additional Selections from the Works of Crabbe, Scott, Coleridge, Pringle, Charlotte Smith, and Mrs. Barbauld. Medium 8vo. 18s. cloth.

SELECT WORKS OF THE BRITISH POETS,

From Chaucer to Withers. With Biographical Sketches, by R. SOUTHEY, LL.D. 1 large vol. 8vo. 30s. cloth; with gilt edges, 31s. 6d.

. The peculiar feature of these two works is, that the Poems are printed entire, without mutilation or abridgment—a feature not possessed by any similar work, and adding obviously to their interest and utility.

SERMON ON THE MOUNT (THE).

[St. Matthew, v. vi. vii.] Intended for a Birth-day Present, or Gift Book for all Seasons. Printed in Gold and Colours, in the Missal style, with Ornamental Borders by OWEN JONES, Architect, and an illuminated Frontispiece by W. BOXALL, Esq. A New Edition. Fcp. 4to. in a rich brocaded silk cover, manufactured expressly, 21s.; or bound in morocco, in the Missal style, by Hayday, 25s.

SHAKSPEARE, BY BOWDLER.

THE FAMILY SHAKSPEARE; in which nothing is added to the Original Text; but those words and expressions are omitted which cannot with propriety be read aloud. By T. BOWDLER, Esq. F.R.S. Seventh Edition. One large vol. 8vo. with 36 Illustrations after Smirke, &c. 30s. cloth; or 31s. 6d. gilt edges.

. A LIBRARY EDITION, without Illustrations, 8 vols. 8vo. £4. 14s. 6d. boards.

SHELLEY, &c.—LIVES OF THE MOST EMINENT LITERARY

MEN OF ITALY, SPAIN, and PORTUGAL. By Mrs. SHELLEY, Sir D. BREWSTER, J. MONTGOMERY, &c. 3 vols. fcp. 8vo. with Vignette Titles, 18s. cloth.

SHELLEY.—LIVES OF MOST EMINENT FRENCH WRITERS.

By Mrs. SHELLEY, and others. 2 vols. fcp. 8vo. with Vignette Titles, 12s. cloth.

SHORT WHIST:

Its Rise, Progress, and Laws; with Observations to make any one a Whist Player; containing also the Laws of Piquet, Cassino, Ecarté, Cribbage, Backgammon. By Major A****. 9th Edit. To which are added, Precepts for Tyros. By Mrs. B****. Fcp. 8vo. 3s. cl. gilt edges.

SMITH (GEORGE).—PERILOUS TIMES;

Or, the Aggressions of Antichristian Error on Scriptural Christianity, considered in reference to the Dangers and Duties of Protestants. By GEORGE SMITH, F.A.S. M.R.A.S. and R.S.L. Fcp. 8vo. 6s. cloth.

"The origin, the cause, and the present aspect of the antichristian error which now oppresses us, are eloquently detailed, and stand in marked contrast with the great element of Christianity, as previously exhibited by the author. Would that the enemies, as well as the followers, of Protestantism would study this work."

CHURCH AND STATE GAZETTE.

SMITH (GEORGE).—THE RELIGION OF ANCIENT

BRITAIN: or, a Succinct Account of the several Religious Systems which have obtained in this Island from the Earliest Times to the Norman Conquest: including an Investigation into the Early Progress of Error in the Christian Church, the Introduction of the Gospel into Britain, and the State of Religion in England till Popery had gained the ascendancy. By GEORGE SMITH, F.A.S. Member of the Royal Asiatic Society, and of the Royal Society of Literature. Fcp. 8vo. 7s. cloth.

SMITH.—THE ENGLISH FLORA.

By Sir JAMES EDWARD SMITH, M.D. F.R.S., late President of the Linnæan Society, &c. 6 vols. 8vo. £3. 12s. boards.

Contents:—Vols. I. to IV. The FLOWERING PLANTS and the FERNS, £2. 8s.

Vol. V. Part 1, 12s.—CRYPTOGAMIA; comprising the Mosses, Hepaticæ, Lichens, Characæ, and Algæ. By Sir W. J. HOOKER.

Vol. V. Part 2, 12s.—The FUNGI—completing the work, by Sir J. W. HOOKER, and the Rev. M. J. BERKELEY, F.L.S. &c.

SMITH (S. H.).—THE FEMALE DISCIPLE OF THE FIRST

THREE CENTURIES of the CHRISTIAN ERA: her Trials and her Mission. By Mrs. HENRY SMITH. Fcp. 8vo. 6s. cloth.

SMITH.—COMPENDIUM OF THE ENGLISH FLORA.

By Sir J. E. SMITH. 2d Edit. with Additions, &c. By Sir W. J. HOOKER. 12mo. 7s. 6d. cl. THE SAME IN LATIN. 5th Edition, 12mo. 7s. 6d.

SMITH.—AN INTRODUCTION TO THE STUDY OF BOTANY.

By Sir J. E. SMITH, late President of the Linnean Society. 7th Edition, corrected; in which the object of Smith's "Grammar of Botany" is combined with that of the "Introduction." By Sir WILLIAM JACKSON HOOKER, K.H., LL.D., &c. 8vo. with 36 Steel Plates, 16s. cloth; with the Plates coloured, £2. 12s. 6d. cloth.

SMITH (SYDNEY).—SERMONS PREACHED AT ST. PAUL'S,

The Foundling Hospital, and several Churches in London; together with others addressed to a Country Congregation. By the late Rev. SYDNEY SMITH, Canon Residentiary of St. Paul's Cathedral. 8vo.

SMITH.—THE WORKS OF THE REV. SYDNEY SMITH.

3d Edition, with Additions. 3 vols. 8vo. with Portrait, 36s. cloth.

. This collection consists of the author's contributions to the Edinburgh Review, Peter Plymley's Letters on the Catholics, and other miscellaneous works.

SOUTHEY'S (ROBERT) COMPLETE POETICAL WORKS;

Containing all the Author's last Introductions and Notes. Complete in one volume, with Portrait and View of the Poet's Residence at Keswick, uniform with Byron's Poems and Thomas Moore's Poetical Works. Medium 8vo. 21s. cloth; or 42s. bound in morocco, in the best manner, by Hayday.

Also, an Edition in 10 vols. fcp. 8vo. with Portrait and 19 Plates, £2. 10s. cloth; morocco, £4 10s.

The following Works, separately:—

JOAN of ARC	Fcp. 8vo. 5s. cloth.	THALABA	Fcp. 8vo. 5s. cloth.
MADOC	Fcp. 8vo. 5s. cloth.	BALLADS, &c.	2 vols. Fcp. 8vo. 10s. cloth.
CURSE of KEHAMA....	Fcp. 8vo. 5s. cloth.	RODERICK	Fcp. 8vo. 5s. cloth.

SOUTHEY (ROBERT).—OLIVER NEWMAN:

A New England Tale (unfinished). With other Poetical Remains. By the late ROBERT SOUTHEY. Fcp. 8vo. uniform with the Ten-Vol. Edition of Mr. Southey's Poetical Works, 5s. cloth.

SOUTHEY (ROBERT). — THE LATE MR. SOUTHEY'S

COMMON-PLACE BOOK; comprising his Readings and Collections in History, Biography, Manners and Literature, Voyages and Travels, &c. &c.; systematically arranged.

[In the press.]

SOUTHEY (ROBERT).—SOUTHEY'S LIFE OF WESLEY.

A New Edition. Edited by his Son, the Rev. CUTHBERT C. SOUTHEY. 8vo. [In the press.]

SOUTHEY, &c. —LIVES OF THE BRITISH ADMIRALS;

With an Introductory View of the Naval History of England. By R. SOUTHEY, Esq. and R. BELL, Esq. 5 vols. fcp. 8vo. with Vignette Titles, £1. 10s. cloth.

SPIRIT OF THE WOODS.

By the Author of "The Moral of Flowers." 2d Edition. Royal 8vo. with 23 beautifully-coloured Engravings of the Forest Trees of Great Britain, £1. 11s. 6d. cloth.

SPOONER.—A TREATISE ON THE STRUCTURE, FUNC-

TIONS, and DISEASES of the FOOT and LEG of the HORSE; comprehending the Comparative Anatomy of these parts in other Animals, embracing the subject of Shoeing and the proper Treatment of the Foot; with the Rationale and Effects of various Important Operations, and the best methods of performing them. By W. C. SPOONER, M.R.V.C. 12mo. 7s. 6d. cloth.

STABLE TALK AND TABLE TALK;

or, SPECTACLES for YOUNG SPORTSMEN. By HARRY HIEOVER. 8vo. 12s. cloth.

"This work will become a great favourite with all persons who are connected with the turf, the chase, and the world of manly sports. It is written in a pleasant, off-hand, dashing manner, and contains an immense variety of information and entertaining matter."—WEEKLY DISPATCH.

STEBBING.—THE HISTORY OF THE CHRISTIAN CHURCH,

from its Foundation to A.D. 1492. By the Rev. H. STEBBING, M.A. &c. 2 vols. fcp. 8vo. with Vignette Titles, 12s. cloth.

STEBBING (REV. H.)—THE HISTORY OF THE CHURCH

of CHRIST, from the Diet of Augsburg, 1530, to the Eighteenth Century; originally designed as a Continuation of Milner's "History of the Church of Christ." By the Rev. HENRY STEBBING, D.D. 3 vols. 8vo. 36s. cloth.

STEBBING.—THE HISTORY OF THE REFORMATION.

By the Rev. H. STEBBING. 2 vols. fcp. 8vo. with Vignette Titles, 12s. cloth.

STEAM ENGINE, BY THE ARTIZAN CLUB.

A Treatise on the Steam Engine. By the ARTIZAN CLUB. Nos. 1 to 22, 4to. 1s. each, sewed. To be completed in 24 Monthly Parts, each illustrated by a Steel Plate and several Woodcuts.

STEEL'S SHIPMASTER'S ASSISTANT:

Compiled for the use of Merchants, Owners and Masters of Ships, Officers of Customs, and all Persons connected with Shipping or Commerce: containing the Law and Local Regulations affecting the Ownership, Charge, and Management of Ships and their Cargoes; together with Notices of other Matters, and all necessary Information for Mariners. New Edition, rewritten throughout. Edited by GRAHAM WILLMORE, Esq. M.A. Barrister-at-Law;—The Customs and Shipping Department, by GEORGE CLEMENTS, of the Customs, London, Compiler of "The Customs Guide;—The Exchanges, &c. and Naval Book-keeping, by WILLIAM TATE, Author of "The Modern Cambist." In 1 thick 8vo. volume, 21s. cloth.

STEPHENS.—A MANUAL OF BRITISH COLEOPTERA;

or, BEETLES: containing a Description of all the Species of Beetles hitherto ascertained to inhabit Great Britain and Ireland, &c. With a Complete Index of the Genera. By J. F. STEPHENS, F.L.S. Author of "Illustrations of Entomology." Post 8vo. 14s. cloth.

STRONG.—GREECE AS A KINGDOM:

A Statistical Description of that Country: its Laws, Commerce, Resources, Public Institutions, Army, Navy, &c.—from the arrival of King Otho, in 1833, down to the present time. From Official Documents and Authentic Sources. By FREDERICK STRONG, Esq. Consul at Athens for the Kingdoms of Bavaria and Hanover. 8vo 15s. cloth.

SUNDAY LIBRARY:

Containing nearly One Hundred Sermons by eminent Divines. With Notes, &c. by the Rev. T. F. DIBDIN, D.D. 6 vols. fcp. 8vo. with Six Portraits, 30s. cloth.

SWAINSON.—A PRELIMINARY DISCOURSE ON THE STUDY OF NATURAL HISTORY. By W. SWAINSON, Esq. Fcp. 8vo. 6s. cloth.

A TREATISE ON THE NATURAL HISTORY AND CLASSIFICATION OF ANIMALS. By W. Swainson, Esq. Fcp. 8vo. 6s.

NATURAL HISTORY AND CLASSIFICATION OF QUADRUPEDS. By W. Swainson, Esq. Fcp. 8vo. with vignette title and 176 Woodcuts, 6s. cloth.

NATURAL HISTORY AND CLASSIFICATION OF BIRDS. By W. Swainson, Esq. 2 vols. fcp. 8vo. Vignette Titles and above 300 Woodcuts 12s. cloth.

HISTORY AND NATURAL ARRANGEMENT OF INSECTS. By W. Swainson, Esq., and W. E. Shuckard, Esq. Fcp. 8vo. with Vignette Title and Woodcuts, 6s. cloth.

ANIMALS IN MENAGERIES. By W. Swainson, Esq. Fcp. 8vo. Vignette Title and numerous Woodcuts, 6s. cloth.

NATURAL HISTORY AND CLASSIFICATION OF FISH, AMPHIBIANS, AND REPTILES. By W. Swainson, Esq. 2 vols. fcp. 8vo. with numerous Woodcuts and Vignette Titles, 12s. cloth.

HABITS AND INSTINCTS OF ANIMALS. By W. Swainson, Esq. Fcp. 8vo. with Vignette and numerous Woodcuts, 6s. cloth.

A TREATISE ON MALACOLOGY; or, the Natural Classification of Shells and Shell-fish. By W. Swainson, Esq. Fcp. 8vo. with Vignette Title and very numerous Illustrations on Wood, 6s. cloth.

A TREATISE ON TAXIDERMY; with the Biography of Zoologists, and Notices of their Works. By W. Swainson, Esq. Fcp. 8vo. with vignette title, and Portrait of the Author, 6s. cloth.

SWITZERLAND.—THE HISTORY OF SWITZERLAND.

Fcp. 8vo. with Vignette Title, 6s. cloth.

TATE.—HORATIUS RESTITUTUS;

Or, the Books of Horace arranged in Chronological Order, according to the Scheme of Dr. Bentley, from the Text of Gesner, corrected and improved. With a Preliminary Dissertation, very much enlarged, on the Chronology of the Works, on the Localities, and on the Life and Character of that Poet. By JAMES TATE, M.A. Second Edition. To which is now added, an original Treatise on the Metres of Horace. 8vo. 12s. cloth.

"Mr. Tate's Horatius Restitutus should find a place in the library of the mature scholar, of the youthful student, and of the accomplished man of the world."—QUARTERLY REVIEW.

TATE.—THE CONTINUOUS HISTORY OF THE LIFE AND

WRITINGS OF ST. PAUL, on the basis of the Acts; with Intercalary Matter of Sacred Narrative, supplied from the Epistles, and elucidated in occasional Dissertations: with the Horæ Paulinæ of Dr. Paley, in a more correct edition, subjoined. By JAMES TATE, M.A. Canon Residentiary of St. Paul's. 8vo. with Map, 13s. cloth.

TAYLER (REV. CHARLES B.)—MARGARET;

Or, the Pearl. By the Rev. CHARLES B. TAYLER, M.A. Rector of St. Peter's, Chester, Author of "May You Like It," "Records of a Good Man's Life," &c. 2d Edition. Fcp. 8vo. 6s. cloth.

TAYLER (REV. CHARLES B.)—LADY MARY;

"Or, Not of the World. By the Rev. CHARLES B. TAYLER, Rector of St. Peter's, Chester; Author of "Margaret, or the Pearl," &c. Fcp. 8vo. 6s. 6d. cloth.

TAYLER (REV. C. B.)—TRACTARIANISM NOT OF GOD:

Sermons. By the Rev. C. B. TAYLER, M.A. Rector of St. Peter's, and Evening Lecturer of St. Mary's, Chester; Author of "Records of a Good Man's Life," &c. Fcp. 8vo. 6s. cloth.

TAYLER (REV. C. B.)—DORA MELDER;

A Story of Alsace. By META SANDER. A Translation. Edited by the Rev. C. B. Tayler, Author of "Records of a Good Man's Life," &c. Fcp. 8vo. with two Illustrations, 7s. cloth.

TAYLOR.—THE STATESMAN.

By HENRY TAYLOR, Esq., Author of "Philip Van Artevelde." 12mo. 6s. 6d. boards.

THIRLWALL.—THE HISTORY OF GREECE.

By the Right Rev. the LORD BISHOP of St. DAVID's (the Rev. Connop Thirlwall). A New Edition, revised; with Notes. Vols. 1 and 2, demy 8vo. with Maps, 24s. cloth. To be completed in 8 volumes, price 12s. each. [Vol. 3 is in the press.]

. Also, an Edition in 8 vols. fcp. 8vo. with Vignette Titles, £2. 8s. cloth.

THOMSON'S SEASONS.

Edited by BOLTON CORNEY, Esq. Illustrated with Seventy-seven Designs drawn on Wood, by Members of the Etching Club. Engraved by Thompson and other eminent Engravers. Square crown 8vo. One Guinea; bound in morocco, in the best manner, by Hayday, 36s.

THOMSON.—THE DOMESTIC MANAGEMENT OF THE SICK

ROOM, necessary, in Aid of Medical Treatment, for the Cure of Diseases. By ANTHONY TODD THOMSON, M.D. F.L.S. &c. 2d Edition. Post 8vo. 10s. 6d. cloth.

THOMSON.—AN ELEMENTARY TREATISE ON ALGEBRA,

Theoretical and Practical. By JAMES THOMSON, LL.D. Professor of Mathematics in the University of Glasgow. 2d Edition. 12mo. 5s. cloth.

THOMSON (JOHN).—TABLES OF INTEREST,

At Three, Four, Four-and-a-Half, and Five per Cent., from One Pound to Ten Thousand, and from One to Three Hundred and Sixty-five Days, in a regular progression of single Days; with Interest at all the above Rates, from One to Twelve Months, and from One to Ten Years. Also, Tables showing the Exchange on Bills, or Commission on Goods, &c. from One-eighth to Five per Cent.; and Tables shewing the Amount of any Salary, Income, Expense, &c. by the Day, Month, or Year. To which are prefixed, a Table of Discount on Bills at a certain number of Days or Months; and a Table shewing the exact Number of Days, from any Day throughout the Year, to the 31st of December, the usual period to which Interest is calculated. By JOHN THOMSON, Accountant in Edinburgh. 12mo. 8s. bound.

TOMLINE (BISHOP).—AN INTRODUCTION TO THE STUDY

OF THE BIBLE: being the First Volume of the Elements of Christian Theology; containing Proofs of the Authenticity and Inspiration of the Holy Scriptures; a Summary of the History of the Jews; an Account of the Jewish Sects; and a brief Statement of the Contents of the several Books of the Old Testament. By the late GEORGE TOMLINE, D.D. F.R.S. Lord Bishop of Winchester. 20th Edition. Fcp. 8vo. 5s. 6d. cloth.

TOMLINE (BISHOP).—ELEMENTS OF CHRISTIAN THEO-

LOGY; containing Proofs of the Authenticity and Inspiration of the Holy Scriptures; a Summary of the History of the Jews; a brief Statement of the Contents of the several Books of the Old and New Testaments; a short Account of the English Translations of the Bible, and of the Liturgy of the Church of England; and a Scriptural Exposition of the Thirty-nine Articles of Religion. By GEORGE TOMLINE, D.D. F.R.S., Lord Bishop of Winchester. Designed principally for the Use of Young Students in Divinity. 14th Edition. With Additional Notes, and a Summary of Ecclesiastical History. By HENRY STEBBING, D.D., Author of "A History of the Church of Christ, from the Confession of Augsburg," &c. &c. 2 vols. 8vo. 21s. cloth.

TOMLINS.—A POPULAR LAW DICTIONARY;

Familiarly explaining the Terms and Nature of English Law; adapted to the comprehension of persons not educated for the legal profession, and affording information peculiarly useful to Magistrates, Merchants, Parochial Officers, and others. By THOMAS EDLYNE TOMLINS, Attorney and Solicitor. 1 thick vol. post 8vo. 18s. cloth.

. The whole work has been revised by a Barrister.

TOOKE.—A HISTORY OF PRICES;

With reference to the Causes of their principal Variations, from 1792 to the Present Time. Preceded by a Sketch of the History of the Corn Trade in the last Two Centuries. By THOMAS TOOKE, Esq. F.R.S. 3 vols. 8vo. £2. 8s. cloth.

. Separately, Vols. 1 and 2, 36s.; Vol. 3, 12s.

TROLLOPE (REV. W.)—ANALECTA THEOLOGICA :

A Critical, Philological, and Exegetical Commentary on the New Testament, adapted to the Greek Text: compiled and digested from the most approved sources, British and Foreign, and so arranged as to exhibit the comparative weight of the different Opinions on Disputed Texts. By the Rev. WILLIAM TROLLOPE, M.A. of Pembroke College, Cambridge, and formerly one of the Masters of Christ's Hospital. New Edition. 2 vols. 8vo. £1. 12s. cloth.

TOWNSEND (CHARLES).—THE LIVES OF TWELVE

EMINENT JUDGES of the PRESENT CENTURY. By W. CHARLES TOWNSEND, Esq. A.M. Recorder of Macclesfield; Author of "Memoirs of the House of Commons." 2 vols. 8vo.

[In the press.]

TURNER.—THE HISTORY OF ENGLAND,

From the Earliest Period to the Death of Elizabeth. By SHARON TURNER, Esq. F.A.S. R.A.S.L. New Edition. 12 vols. 8vo. £8. 3s. cloth.

Or four separate portions, as follow:—

THE HISTORY of the ANGLO-SAXONS. 6th Edition. 3 vols. 8vo. £2. 5s. boards.

THE HISTORY of ENGLAND during the MIDDLE AGES. 3d Edition. 5 vols. 8vo. £3. bds.

THE HISTORY of the REIGN of HENRY VIII. 3d Edition. 2 vols. 8vo. 26s. boards.

THE REIGNS of EDWARD VI., MARY, and ELIZABETH. 3d Edit. 2 vols. 8vo. 32s. bds.

TURNER (SHARON).—RICHARD III.: A POEM.

By SHARON TURNER, Esq. F.S.A. and R.A.S.L. Author of "The History of the Anglo-Saxons," "The Sacred History of the World," &c. Fcp. 8vo. 7s. 6d. cloth.

TURNER.—THE SACRED HISTORY OF THE WORLD,

Philosophically considered. By SHARON TURNER, F.S.A. R.A.S.L. New Edit. 3 vls. 8vo. 42s. cl.

TURNER.—A TREATISE ON THE FOOT OF THE HORSE,

And a New System of Shoeing, by one-sided nailing; and on the Nature, Origin, and Symptoms of the Navicular Joint Lameness, with Preventive and Curative Treatment. By JAMES TURNER, M.R.V.C. Royal 8vo. 7s. 6d. boards.

TURTON'S (DR.) MANUAL OF THE LAND AND FRESH-

WATER SHELLS of the BRITISH ISLANDS. A New Edition, thoroughly revised and with considerable Additions. By JOHN EDWARD GRAY, Keeper of the Zoological Collection in the British Museum. Post 8vo. with Woodcuts, and 12 Coloured Plates 15s. cloth.

TWISS (DR. T.)—THE OREGON QUESTION EXAMINED,

In respect to Facts and the Law of Nations. By TRAVERS TWISS, D.C.L. F.R.S. Professor of Political Economy in the University of Oxford, and Advocate at Doctors' Commons. 8vo. with Maps of North America and the Oregon Territory (with the Columbian River on an enlarged scale, reduced from an American Government Survey), 12s. cloth.

TYTLER (PROF.) — PROFESSOR TYTLER'S ELEMENTS

OF GENERAL HISTORY, Ancient and Modern, with Dr. NARES' Continuation. A New Edition, revised and continued to the Death of William IV. 8vo. with 7 Maps, 14s. cloth.

URE.—DICTIONARY OF ARTS, MANUFACTURES, & MINES;

Containing a clear Exposition of their Principles and Practice. By ANDREW URE, M.D. F.R.S. M.G.S. M.A.S. Lond.; M. Acad. N.L. Philad.; S. Ph. Soc. N. Germ. Hanov.; Mulii. &c. &c. 3d Edition, corrected. 8vo. illustrated with 1240 Engravings on Wood, 50s. cloth.

By the same Author.

SUPPLEMENT of RECENT IMPROVEMENTS. 2d Edition, 8vo. with Woodcuts, 14s. cloth.

VON ORLICH (CAPT.)—TRAVELS IN INDIA;

Including Scinde and the Punjab, in 1842 and 1843. By Capt. LEOPOLD VON ORLICH. Translated from the German, by H. EVANS LLOYD, Esq. 2 vols. 8vo. with coloured Frontispieces, and numerous Illustrations on Wood, 25s. cloth.

WALFORD (J. E.)—THE LAWS OF THE CUSTOMS,

Compiled by Direction of the Lords Commissioners of Her Majesty's Treasury, and published under the Sanction of the Commissioners of Her Majesty's Customs; with Notes and a General Index. Edited by J. G. WALFORD, Esq. Solicitor for the Customs. Printed for Her Majesty's Stationery Office, and published by Authority. 8vo. 10s. 6d. cloth.

WALKER (GEO.)—CHESS STUDIES;

Comprising One Thousand Games of Chess, as really played by the first Chess Players; forming a complete Encyclopædia of Reference, and presenting the greatest Collection extant of fine specimens of strategy in every stage of the Game. Selected and arranged by GEORGE WALKER, Author of "Chess made Easy," "A New Treatise on Chess," &c. 8vo. 10s. 6d. sewed.

WATERTON.—ESSAYS ON NATURAL HISTORY,

Chiefly Ornithology. By CHARLES WATERTON, Esq., Author of "Wanderings in South America." With an Autobiography of the Author, and a View of Walton Hall. New Edition, fcp. 8vo. 8s. cloth.

SECOND SERIES. With Continuation of Mr. WATERTON's Autobiography. New Edition, fcp. 8vo. with Vignette by T. Creswick, A.R.A. 6s. 6d. cloth.

WARDLAW.—DISCOURSES ON THE PRINCIPAL POINTS

OF THE SOCINIAN CONTROVERSY—the Unity of God, and the Trinity of Persons in the Godhead; the Supreme Divinity of Jesus Christ; the Doctrine of the Atonement; the Christian Character, &c. By RALPH WARDLAW, D.D. 5th Edition, 8vo. 15s. cloth.

WATTS (A. A.)—ALARIC WATTS' POETRY AND PAINTING.

LYRICS OF THE HEART; with other Poems. By ALARIC A. WATTS. Illustrated by Forty highly finished Line-Engravings, from the Designs of many of the most celebrated modern Painters, by some of the most eminent Engravers of the age. Square crown 8vo. printed and embellished uniformly with Rogers's "Italy" and "Poems," 31s. 6d. boards; or proof impressions, 63s. boards; proofs before letters, on quarto colombier, India paper, (only 50 copies printed), £5. 5s.

[In the press.]

WEBSTER.—AN ENCYCLOPÆDIA OF DOMESTIC ECONOMY;

Comprising such subjects as are most immediately connected with Housekeeping: as, The Construction of Domestic Edifices, with the modes of Warming, Ventilating, and Lighting them—A description of the various articles of Furniture, with the nature of their Materials—Duties of Servants—A general account of the Animal and Vegetable Substances used as Food, and the methods of preserving and preparing them by Cooking—Making Bread—The Chemical Nature and the Preparation of all kinds of Fermented Liquors used as Beverage—Materials employed in Dress and the Toilette—Business of the Laundry Description of the various Wheel Carriages—Preservation of Health—Domestic Medicine, &c. &c. &c. By THOMAS WEBSTER, F.G.S. &c.; assisted by the late Mrs. Parkes, Author of "Domestic Duties." 1 large vol. 8vo. with nearly 1000 Woodcuts, 50s. cloth.

WEIL (DR. G.)—THE BIBLE, THE KORAN, AND THE

TALMUD; or, Biblical Legends of the Mussulmans, compiled from Arabic Sources, and compared with Jewish Traditions. By Dr. G. WEIL, Librarian of the University of Heidelberg, Fellow of the Asiatic Society of Paris, &c. Translated from the German, with Occasional Notes. Post 8vo. 7s. 6d. cloth.

WELSFORD (HENRY.)—ON THE ORIGIN AND RAMIFICA-

TIONS of the ENGLISH LANGUAGE; preceded by an Inquiry into the Primitive Seats, Early Migrations, and Final Settlements of the principal European Nations. By HENRY WELSFORD. 8vo. 10s. 6d. cloth.

WESTWOOD (J. O.)—AN INTRODUCTION TO THE MODERN

CLASSIFICATION OF INSECTS; founded on the Natural Habits and compounding Organisation of the different Families. By J. O. WESTWOOD, F.L.S. &c. &c. &c. 2 vols. 8vo. with numerous Illustrations, £2. 7s. cloth.

WHITLEY (DR. J.)—THE LIFE EVERLASTING :

In which are considered—the Intermediate Life, the New Body and the New World, the Man in Heaven, Angels, the Final Consummate Life. By JOHN WHITLEY, D.D. Rector of Ballymackey, and Chancellor of Killaloe. 8vo. 9s. cloth.

WHITLEY (NICHOLAS).—THE APPLICATION OF GEOLOGY

TO AGRICULTURE, and to the Improvement and Valuation of Land; with the Nature and Properties of Soils, and the Principles of Cultivation. By NICHOLAS WHITLEY, Land-Surveyor. 8vo. 7s. 6d. cloth.

WIGAN (DR. A. L.)—THE DUALITY OF THE MIND,

Proved by the Structure, Functions, and Diseases of the Brain, and by the Phenomena of Mental Derangement; and shewn to be essential to Moral Responsibility. With an Appendix. By A. L. WIGAN, M.D. 8vo. 12s. cloth.

WILBERFORCE (W.)—A PRACTICAL VIEW OF THE PRE-

VAILING RELIGIOUS SYSTEMS of PROFESSED CHRISTIANS, in the Higher and Middle Classes in this Country, contrasted with Real Christianity. By WM. WILBERFORCE, Esq. M.P. 17th Edition, 8vo. 8s. boards.—19th Edition, 12mo. 4s. 6d. boards.

WILKINSON.—THE ENGINES OF WAR, &c.

Being a History of Ancient and Modern Projectile Instruments and Engines of Warfare and Sporting; including the Manufacture of Fire-Arms, the History and Manufacture of Gunpowder, of Swords, and of the cause of the Damascus Figure in Sword Blades, with some Observations of Bronze, &c. By H. WILKINSON, M.R.A.S. 8vo. 9s. cloth.

WILLIS (N. P.)—DASHES AT LIFE WITH A FREE PENCIL.

By N. P. WILLIS, Esq. Author of "Pencilings by the Way," &c. 3 vols. post 8vo. 31s. 6d.

WILLOUGHBY (LADY).—A DIARY,

Purporting to be by the LADY WILLOUGHBY, of the Reign of Charles I.; embracing some Passages of her Domestic History from 1635 to 1648. Produced in the style of the period to which the Diary refers. 3d Edit. Square fcp. 8vo. 8s. boards; or 18s. in morocco by Hayday.

WINTER (J. W.)—THE HORSE IN HEALTH AND DISEASE :

Or, Suggestions on his Natural and General History, Varieties, Conformation, Paces, Age, Soundness, Stabling, Condition, Training, and Shoeing. With a Digest of Veterinary Practice. By JAMES W. WINTER. M.R.C.V.S.L. Member of the Association Littéraire d'Egypte, late Veterinary Surgeon to Mehemet Ali and Ibrahim Pasha. 8vo. 10s. 6d. cloth.

ZOOLOGY OF THE VOYAGE OF H.M.S.S. EREBUS AND

TERROR. Under the Command of Capt. Sir JAMES CLARK ROSS, R.N. F.R.S. during the years 1839, 40, 41, 42, 43. Published by Authority of the Lord's Commissioners of the Admiralty. Edited by JOHN RICHARDSON, M.D. F.R.S. &c.; and JOHN EDWARD GRAY, Esq. F.R.S. Parts I. to X. royal 4to. with numerous coloured and plain Plates, 10s. each.

ZUMPT (PROF.)—A GRAMMAR OF THE LATIN LANGUAGE.

By C. G. ZUMPT, Ph. D. Professor in the University of Berlin, and Member of the Royal Academy of Berlin. Translated from the Ninth Edition of the original, and adapted for the use of English Students, by LEONHARD SCHMITZ, Ph. D., Rector of the High School of Edinburgh; with numerous Additions and Corrections communicated to the Translator by the Author. 8vo. 14s. cloth.

7.

